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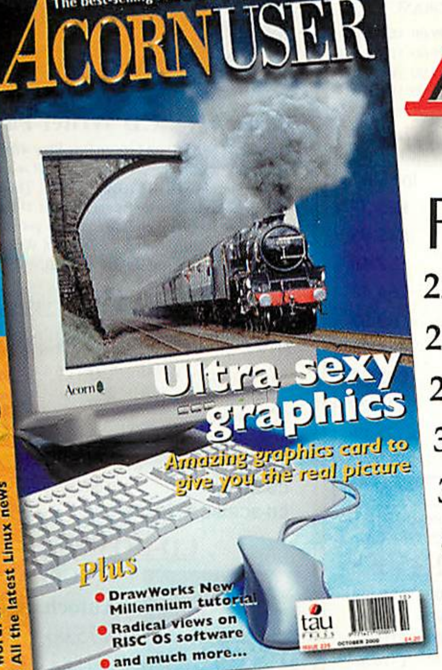


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ACORN USER



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Here's something I'd like you to think about:

RISC OS is not easy to use.

Okay, still reading? Good. There is a condition attached to that which is:

If you're new to it.

Are you busy shaking your head now, or saying "no, no, it's really easy to use"? I used to think that too, but my eyes have been opened recently. Don't get me wrong, I know that it has a user interface which gives fantastically high productivity and an overall design that delivers as much power to the user as possible.

But the problem with RISC OS and its apps are that they are *too* simple and there are assumptions as to the understanding and knowledge level of the user which can be insurmountable barriers if you're new.

"Yes but kids use them in schools." True but irrelevant. In schools the kids do not install the programs and often they don't even launch them, after a while they get used to the system and slowly gain knowledge about how to do stuff, but they start with their hands being thoroughly held.

Outside of schools that isn't true. Let's take someone switching on the computer for the first time: It beeps, it displays some screens then the desktop and finally it stops. What now? Try to imagine someone who doesn't know what they're doing: *what do they do now?*

How about installing a program? "Well you just drag the application icon from the floppy on to the hard disc." *What?* Even supposing they can do that there is much that is not said, for example: how do you get the program to be booted at start-up so that clicking a document launches the app?

"RISC OS 4 solves that," says Mr Smug – oh no it doesn't because you still need to know what you have to do. It's not automatic.

Here's a real life example: my wife Pam works in a school that had a few A3020s that "didn't work". Apart from various minor problems with incorrect *!Boot* files (which is relevant but not the main point), on one machine she found three installations of *TextEase* all in different places. Why? Because each new teacher came along, couldn't find *TextEase* and installed a new copy.

Mr Smug says "oh well if you want your hand holding that much you better use Windows". *Which* is exactly the point.

RISC OS is missing elements that make it easy for people to get started, you have to have a gradient approach to learning to use the machine, people have to be able to get started straight away – and they have to be told what to do.

Steve Turnbull

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Microsoft has no time for anyone

One of the features of the Internet is it's globalisation of trade and commerce – but, just like the standardisation of time across the UK when the railways became prevalent in the Nineteenth Century, standardisation of time across the Internet has now become a priority.

Though not a definite problem as yet there is evidence that deals on the Internet could run into difficulty without properly synchronised time-keeping between linked machines.

As the UK is custodian of Greenwich Mean Time it is a UK government and industry initiative that is driving the standardisation of time on the Internet: Greenwich Electronic Time (GET).

The system is based on Greenwich Mean Time and will work in a similar way: time is normally calculated with reference to the 0° longitude line that cuts through the Greenwich Royal Observatory in south east London.

But Greenwich Electronic Time uses a network of 60 atomic clocks across Europe and the US which are accurate to within three one-hundred thousandths of a second. These clocks are connected to the Internet and Web browsers will be able to access them using a set of Java applets designed for the purpose.

There is already a network time protocol in operation which coordinates time across the Internet but the new system improves the way it works to assist in the development of e-commerce. The GET package of Java applets can consult the atomic clocks and synchronise the computers clock to ensure that Internet deals are properly time-coordinated

All e-mail and e-commerce transactions have proper time-stamps already however most systems keep these as local-computer time which could be wildly inaccurate. Without GET there could be trouble over transfers of ownership and the electronic signing of contracts – something which is bound to increase.

But there is a problem: Microsoft. The Microsoft implementation of Java for its browser Internet Explorer is bugged in a way that prevents this from working.

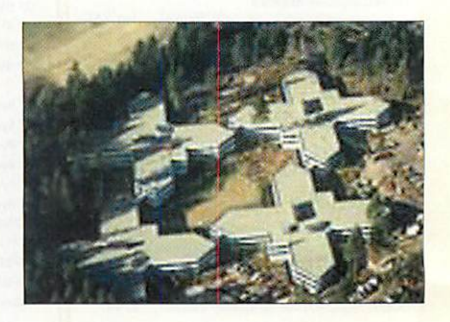
Java is a potentially dangerous language since the code is downloaded from anywhere on the Internet it could do extremely nasty things to your computer. So the designers created the concept of the secure "sandbox" Java applets that are downloaded from the Internet *cannot* access the majority of the computer, certainly not its files and also not its clock.

There are exceptions in the form of "trusted" applets (those from trusted servers which is configured for your system) and these are permitted to break the security and play outside the sandbox, still to a very limited extent.

The time synchronisation applets would be available from a trusted server and would be permitted to access the clock on the machine because of that – any attempt to download similarly named applets from any other non-trusted server would stop the access from being successful.

However Microsoft's Java implementation has a bug in the code that allows access outside the sandbox – basically Microsoft's Java doesn't trust *anyone* so even configured sites are treated as untrustworthy, potentially hostile, unless the overall security level is configured to the minimum. In this case any genuinely hostile applet could wreck the machine and no one in their right minds would reduce the security level in this way.

Microsoft®



James Roper, chief executive of the Interactive Media in Retail Group, a GET partner must have been feeling political when he said: "It is a bug that Microsoft has not needed to fix because no one is providing time tools yet. But it is becoming more and more of an issue."

The problem is on Microsoft's bug list but probably won't be fixed until the next release of the browser as a whole. Which is odd, as you'd think Microsoft would want to promote their system for safer e-commerce – but perhaps they have something else lined up to compete with it.

RISC OS machines come out both well and badly in this respect. On the bad side we don't have any version of Java that will run this software at present, though that should be resolved presently.

On the positive side, since the RISC OS philosophy involves keeping everything that doesn't a different job as a separate unit simply upgrading the Java will make all RISC OS Web browsers compliant.





Bill under fire again

Microsoft is now under attack from Europe following the anti-Trust and anti-competitive cases in the US which result in the order to split Microsoft in two.

Sun Microsystems, taking the opportunity to kick someone when they're down, has issued complaints to the European Commission claiming that Microsoft breached EU competition rules by engaging in discriminatory licensing and refusing to supply essential information on its Windows operating system.

In its turn the European Commission has sent a "statement of objections" to Microsoft "for allegedly abusing its dominant position in the market for personal computer operating systems software by leveraging this power into the market for server software".

This is not the same as the action taken in the US where the Justice Department claimed Microsoft protected its dominance in PC operating systems by attempting to weaken the competition, specifically Netscape *Navigator* and Sun's Java system. The Commission hasn't decided anything as yet "but is taking the allegations of misconduct very seriously", said a spokes-woman for the European Competition Commissioner. "We will not tolerate the extension of existing dominance into adjacent markets through the leveraging of market power by anti-competitive means.

"All companies that want to do business in the European Union must play by its anti-trust rules and I'm determined to act for their rigorous enforcement."

The European Union has issued a formal legal warning against Microsoft, accusing it of abusing its position as market leader in desktop computers to give itself an advantage in the server software arena.

Replying to Sun's accusation about not supplying sufficient information Microsoft's European legal chief, John Frank, said: "Sun's complaint is based on their desire to gain access to our technical trade secrets. We don't believe that the law requires Microsoft, or any other company, to share its secrets with direct competitors."

Which would be normally true but if that information were withheld to deliberately ensure that Microsoft's server software worked more efficiently with the desktop software than other systems, then that's another matter.

Failure to satisfy the Commission's accusations within two months could result in fines of a percentage of Microsoft's revenues, normally this has never gone beyond one per cent in other cases but theoretically could go as high as ten per cent.

Microsoft has two months to respond, but issued a statement on Thursday saying it was confident it had not broken any EU laws.

This legal situation in Europe adds to the strength of argument in favour of RISC OS, as Tony Blair's friendliness with Microsoft becomes less advantageous as Bill Gates gets deeper and deeper into a mire of accusations – as long as we take this opportunity and capitalise on it.

Portable at RISC OS 2000 Show

Riscstation Ltd have confirmed that they will be presenting their new RISC OS portable – as previewed in concept form at the Wakefield Show in May.

The RISC OS 2000 Show – sponsored by Castle Technology, RiscStation and *Acorn User* – is being held at the Queen's Stand, Epsom Racecourse, Epsom Downs on 21st/22nd October 2000. As the time approaches the show continues to expand and develop with confirmations from stalwarts of the RISC OS market and new companies joining our ranks.

The organisers, ARM CLub, ROUGOL and SASAUG, announced that by the end of August over 30 exhibitors have confirmed their attendance. New stands are likely to include:

- Akalat Publishing
- Really Good Software Company
- Association of Acorn User Groups
- Finger Technology
- Palmtop Magazine
- Reflex Technology
- Millipede
- Eesox
- 4th Dimension
- ARM Club
- Charity stand



The show will run from 10:00am to 5:00pm on Saturday and 10:00am to 4:00pm on Sunday. Shuttle buses will run to and from the main Epsom station throughout the show. Ticket prices are £4 in advance, £5 on the door and will be valid for both days.

For advance tickets write to RISC OS 2000, Merton Court, 38 Knoll Road, Sidcup, Kent, DA14 4QU. For more show information visit the ARM Club web site on **www.armclub.org.uk/shows/riscos**



NoticeBoard gets tweaked

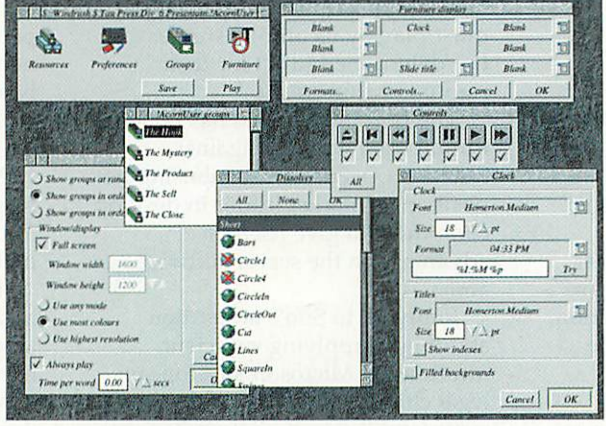
Really Good Software reminded us recently that, like all good RISC OS programs their own offering, *NoticeBoard*, has been continuously developed since its introduction in the last century – 1994 to be a little more precise.

The last major upgrade (version 1.50), released at the Wakefield Show as *NoticeBoard Professional* added a range of enhancements. Now the latest modification that allows *NBPro* to handle WAVs without the *MovieFS* player has tweaked *NBPro* up to version 1.60.

From modest beginnings as a classroom and general school rolling display teaching aid the now fully featured *NoticeBoard Professional* can meet any business, exhibition or educational requirement for controlled or automatic on-screen or projected presentations. While retaining its 'easy to set up and easy to run' advantages *NBPro* now provides full operator control of slide show programs and big screen displays when programs are run using an electronic projector.

The great versatility of *NBPro* enables slides to be created from a range of readily available visual source material: Drawfiles, ArtWorks, Vantage, Sprites, JPEGs and HTML. Sound can be added to slides, or groups of slides, using WAV, MP3, DTTSamp, Amadeus, Replay, CD or Tracker sources, or included as background music.

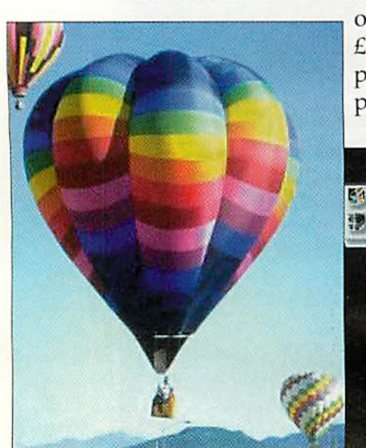
NoticeBoard Pro costs £32.50 for the complete new version. To upgrade from versions earlier than 1.50 return your original discs to RGSC with a cheque for £16.50 (which includes p&p), and don't forget the return address! All discs issued will be 800K format. If you have a need to handle WAVs without the benefit of *MovieFS* player upgrading from V1.50 to V1.60 will cost you just £3.00.

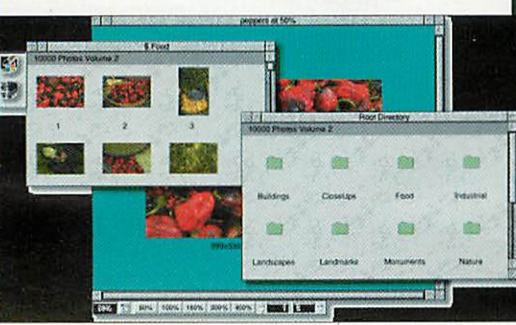


Massive new graphics CDs

John Whitington of TNP Software has just announce two new RISC OS Clipart CDs: *10000 Photos* and *10000 Photos Volume 2* each contain professionally taken photographs on a wide variety of subjects. These royalty-free images come with a comprehensive RISC OS reader and are ideal for use in brochures, posters and so on. Each CD is £9.99 including postage and packing or just £18.99 for both together. Further details including quarter size samples such as the ones you see here can be found on their Web site **www.tnpsoft.co.uk**, or if you have any other enquiries contact john@tnpsoft.co.uk.

To order, send a cheque or postal order made payable to "John Whitington" to the following address: John Whitington, 617 Fox Hollies Road, Hall Green, Birmingham B28 9DR.







In brief

Credit card fraud

Well-respected RISC OS company Spacetech have been forced into liquidation from a foreign credit card scam originating in Thailand. Details of the fraud are not available however the result has cost Spacetech too much and they cannot continue trading.

However the nature of the problem is such that although the company has had to close provision has been made to ensure its products such as the Photoreal printer drivers, the digital cameras and software will continue to be supported. A brand new CD-Rom version of Photodesk is also due for release in the near future.

Chris Hornby was at pains to point out that the company's problems were not caused by the state of the RISC OS market and will provide support via e-mail only until such time as provision can be made for phone support under a new company.

Better resultz

Out of the blue comes news of upgrades to the the *Resultz* and *Fireworkz* software packages. The new versions give RISC OS 4 compliance by accepting long filenames, plus there is now support for loading other formats such as PipeDream and Lotus 1-2-3.

Contact Abacus Training, 29 Okus Grove, Upper Stratton, Swindon, Wilts SN2 6QA; Tel/fax: (+44/0) 1793 723347; E-mail: goldline@abacusline.demon.co.uk; Web: www.abacusline.demon.co.uk

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mico media computer As hd plus 48 speed CD ROM drive. — £ 549.00

mico @hd computer As hd plus 56k internal modem, 6 month Argonet connection, 5 e-mail addresses, 10MB web storage. — *£ 589.00*

mico @media computer As media plus 56k internal modem, 6 month Argonet connection, 5 e-mail addresses, 10MB web storage. — £ 639.00

Upgrade options These prices only refer to upgrades ordered with a computer

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20GB IBM 5400 RPM hard disc drive	£ 25.00
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*please note Mico will only achieve these high resolutions with a Lightning card and a n ultra-high resolution display..

The hard disc and CD ROM data transfer fiures were obtain on a randomly selected production mico using independent speed test software.

Octopus on TV

Octopus Systems have announced that the newest upgrade to the *Teletext+* is now available, this new version overcomes the data logging problems with the new transmission systems – in particular ITV no longer broadcast CRC checks on their pages.

Teletext+ displays Teletext pages – such as Ceefax and so on – in a window on the Desktop. More importantly it provides advanced searching facilities that can search hundreds of Teletext pages for keywords, log share prices, list your favourite TV and radio programmes and, with extra speech software, it will even tell you when they are about to start.

New features/bug fixes include:

- Correct handling of new formats;
- Alarms work for programmes starting after midnight;
- Alarms can be set if keywords appear in programme description (not just the title line)
- *TeleButler* display shows the channel for TV and radio
- Improved TeleButler TV display
- Better script facilities
- Fully compatible with RISC OS 4

A *TeleButler* modulator can be added to the CC Teletext card to provide an amazing information display on your own TVs. *TeleButler* will display the details of your favourite TV and radio programmes on the TV – as well as on your computer – using an independent custom display not just a copy of the Desktop display.

By adding the Octopus *Caller Display* system too, you can check details of incoming and outgoing telephone calls on your TV as well.

The *Teletext+* update is also available to existing users.

Prices are: *Teletext+* with internal CC Teletext card £125; *Teletext+* with external Teletext (specify computer) £99; *Teletext+* software for other adapters and cards £39; *Speak* software £22; *Caller Display* £104; *TeleButler* modulator £59.

Upgrade options are available to existing users are:

- For £10 together with your details, serial number and e-mail address; and the update will be sent by e-mail (as a 100K Spark file) and future updates will be sent automatically for the rest of the year 2000.
- For £12 with your details and original *Teletext+* disc. The update disc will be sent by post. For an additional £4 you can also get the new, 5th edition, 52pp manual.

Upgrades are free to users who bought Teletext+ within the last 12 months. Paul Skirrow of Octopus Systems regrets that he cannot accept credit cards at present.

Contact: Octopus Systems, 9 Randwell Close, Ipswich IP4 5ES, UK. Tel: 01473 728943; Fax: 01473 270643; Web: **www.octosys.co.uk**

Crystal education

The interactive educational program 'Atomic Packing and Crystal Structure' which explains how spheres can be packed together in different ways to produce crystal structures is now freely available in three versions from two Web sites.

Originally written in 1985 for the BBC Micro, and marketed for many years by the Institute of Materials as part of its 'Engineering Materials Software Series'. It was translated to run under DOS using a BBC Basic interpreter.

More modern programs are now written only for the Windows environment on PCs so that the Institute of Materials has now given permission for the copyright to revert to the original authors and to allow the programs to be freely downloaded from the Internet.

Fortran Friends have adapted the BBC Micro version to run under RISC OS though it should work equally well on RISC OS 2 or 4.

Fortran Friends **www.argonet.co.uk/users/fortran/** – look under 'educational software for crystallography' and the British Crystallographic Association **http://bca.cryst.bbk.ac.uk/BCA/progs/cchem/index.html**

Kate Crennell of Fortran Friends would like to hear from anyone interested in a desktop version of these programs contact her via fortran@argonet.co.uk, or if you are interested in a collaboration to make educational programs on other topics in crystallography.

In brief

That special spark

David Pilling, author of numerous useful and small programs as well as *Ovation Pro*, has announced that the current price of his excellent archiving application *Spark* is just £6 while owners of the original *Spark* discs can upgrade to the image filing system version – *SparkFS* – for just £19 (all inclusive) if the old disc is included.

David Pilling, PO Box 22, Thornton Cleveleys, Blackpool FY5 1LR, United Kingdom. E-mail: david@pilling.demon.co.uk; Web: www.pilling.demon.co.uk; Fax: (+44/0) 870 052 0941

Acorn User Survey

As usual the *Acorn User* survey has revealed a great deal about your likes and dislikes. As a result over the next couple of months we will be modifying the magazine content to match those things you want to see most.

While maintaining all our usual content, the most significant changes will be a slight reduction in *Linux News* but the addition of a new Internet section and added education coverage.

To go along with these changes will be increased direct promotion into schools – a move which complements and supports the intentions of the main hardware manufacturers who also have plans in this area.

These steps are just the beginning of the new *Acorn User* and the bright new future for the RISC OS market as a whole.

Stop Press

RiscStation Ltd. are working on a "turnkey" classroom solution. Once set up it should require no intervention from teachers , technicians or whoever in order for *it to work* fully on a day-to-day basis from day one.

Full details next issue.

Contacting AU

news@acornuser.com

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Kinetic Risc PCs

Kinetic (64+4+2Mb, 10Gb HD, 44x CD)	£1179.00
Kinetic Internet (128+8+2Mb, 30Gb, 44x, 56K)	£1409.00

StrongARM Risc PCs

Risc PC 8+0Mb, 2Gb HD	£890.00
Risc PC 16+0Mb, 4Gb HD	£948.00
Risc PC 16+2Mb, 4Gb HD, 40x CD	£1039.00
Risc PC 32+2Mb 8Gb, DVD CD	£1099.00
Web Wizard – 32+2Mb, 8Gb HD, CD, speakers, Internet pack with Oregano & 56K modem	£1179.00
Sprinter – 10baseT NC, 16Mb, kbd & mouse	£361.00

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— Registered Dealer —

RiscStation Series

R7500 Lite (no monitor)	£598.00
R7500 Lite (with their 15" monitor)	£715.00
R7500 Lite (with their 17" monitor)	£774.00
R7500 Lite (with their 19" monitor)	£891.00

The Lite+ model is the same as the Lite, but has an 8.4Gb HD and 64Mb RAM fitted as standard.
R7500 Lite+ To Lite prices, please add £94.00

The Scorcher model is the same as the Lite, but has a 10Gb HD and 64Mb RAM fitted as standard, plus at least a 4x4x24 CD ReWriter, CD Burn and a blank disc.

R7500 Scorcher To Lite prices, please add £315.00
R7500 Scorcher Twindeck (as Scorcher, with additional 48x CD drive) To Lite prices, add £349.00

POSsum EPOS system £Call

The Networx model has the same specifications as the Lite but has no HD or CD fitted as standard. Monitors available for the same price differences as with the Lite.
R7500 Networx (no monitor) £480.00

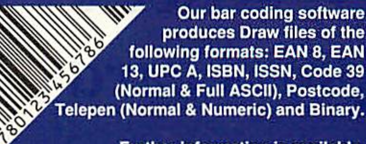
The Networx HD model is the same as the Networx, but has a (minimum of) 2Gb HD fitted as standard.
R7500 Networx HD To Networx prices, add £59.00



Psion Computers

Revo	£284.95
Series 5mx	£408.50
Series 7	£664.95
netBook	£870.00



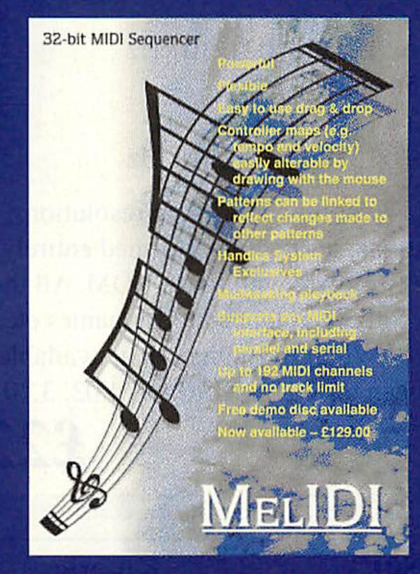


We supply a range of CCD and laser bar code scanners which include our !BarReader driver software to allow bar codes to be read into and control most desktop software.

Further information is available.
Complete systems from £137.63

Our bar coding software produces Draw files of the following formats: EAN 8, EAN 13, UPC A, ISBN, ISSN, Code 39 (Normal & Full ASCII), Postcode, Telepen (Normal & Numeric) and Binary.

Further information is available.
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iiyama S500M1 (15")	£159.00
iiyama S700JT1 (17")	£190.00
iiyama Vision Master 404 (17")	£283.00
iiyama Vision Master Pro 410 (17" NF)	£299.00
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iiyama Vision Master 451 (19")	£435.00
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iiyama Pro-Lite 3612 (14.1" LCD)	£804.00
iiyama Pro-Lite 3813 (15" LCD)	£780.00
iiyama Pro-Lite 3823 (15" LCD)	£803.00
iiyama Pro-Lite 3833 (15" LCD)	£992.00
iiyama Pro-Lite 4633 (18.1" LCD)	£2340.00
iiyama Pro-Lite 4634 (18.1" LCD)	£2340.00

Touchscreen monitors coming soon.

Memory Upgrades

Please call to check current prices.
Other upgrades are available.

A3000 1-4 Mb	£64.60
A3010 1-4 Mb	£66.00
A3020/A4000 2-4 Mb	£49.00
A5000 2-4 Mb	£55.00
A300, 400, 5000 4-8 Mb	£128.00
Risc PC/A7000/RiscStation/Mico SIMMs:	
16Mb FPM	£36.25
32Mb FPM	£66.25
32Mb FPM (high clearance)	£73.50
64Mb EDO (works in Risc PCs)	£63.50
64Mb FPM	£153.95
128Mb FPM HC	£225.00
1Mb VRAM	£45.00
1-2Mb VRAM exchange	£55.00
2Mb VRAM	£92.00

Music & Sound Section

Please call for other musical items

MIDI interfaces:	
DMI 50 dual MIDI card (2x2)	£119.95
DMI 50XG	£259.95
XG upgrade for DMI 50	£151.95
16-bit sampler for DMI 50	£87.95
MIDI Max II internal 1x1x1	£92.75
Parallel Port 1x1x1	£89.20
RiscStation drivers & cable	£17.95
RiscStation XG card & cable	£116.95
RiscStation XG card, cable & keyboard	£245.95
Synth 8 or Basic Synth	£46.95
Synth Plus	£58.65
Music & Sound Programmer's Guide	£16.95
Other hardware:	
Evolution MK149 keyboard	£125.00
Fatar SL 760	£450.00
Fatar SL 880	£600.00
Fatar SL 1100	£800.00
Fatar SL 2001	£1050.00
Digital & Analogue Irlam i16 sampler	£175.00
Sound Byte Recorder	£57.50
Yamaha YST-M8 speakers	£45.50
YST-M15 speakers	£57.50
YST-M20 DSP speakers	£65.75
YST-MS24 (2x satellites & subwoofer)	£109.95
YST-MS30 speakers & subwoofer	£149.00
YST-M100 speakers	£117.00
YST-MSW5 subwoofer	£59.00
YST-MSW10 subwoofer	£71.20
Yamaha MU15 sound module	£199.00
Yamaha MU128 module	£744.00
Other software:	
MediaPack	£23.95
MIDI Support	£18.50
Prosound	£116.95
Rhapsody 4	£94.95
Junior Sibelius	£49.00
Sibelius 6	£99.95
Sibelius 7 Student	£319.95
Sibelius 7	£520.95
Sibelius for Windows is also available	
Optical Manuscript	£259.00
Sound module serial driver	£37.95
Studiosound	£116.95

Other Hardware

Ethernet card (Combi NIC slot)	£116.30
Hard drives & kits	£Call
Mouse (Ergo)	£14.95
Mouse (Logitech)	£23.95
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Printers	£Call
RPC second slice (no PSU)	£90.00
RISC OS 4 (fitting available)	£120.00
RiscStation internal modem pack	£99.95
RiscStation second serial port	£Call
Scanners	£Call
StrongARM & RISC OS 3.7	£269.00
StrongARM & RISC OS 4	£299.00
Triple serial card	£99.95
ViewFinder card	Approx. £235.00

Other Software

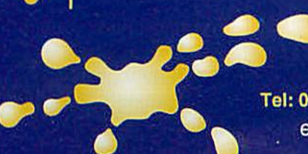
Ankh	£23.00
ANT Internet Suite 2	£112.00
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Chaos Engine	£19.50
DataPower 2	£165.00
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Personal Accounts	£43.00
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Prophet 3+ Pro	£160.00
Quake	£22.00
Repton Compendium	£18.00
Schema 2	£121.50
SiteWriter	£58.95
Sound Plugin	£11.50
SVG Plugin	£11.50
Sleuth 3	£76.95
TBA CD	£20.00
TechWriter Pro+	£189.95
TopModel 2	£145.00
WebFX3D	£24.50

Books & Manuals

RISC OS Manuals CD	£29.95



Discs (e.g.10x white discs – £4.99, 20x black discs – £6.93, 50x black discs – £13.99)
Batteries (e.g. 4x AA Xtra alkaline – £1.96, 1x 9V alkaline – £1.92)
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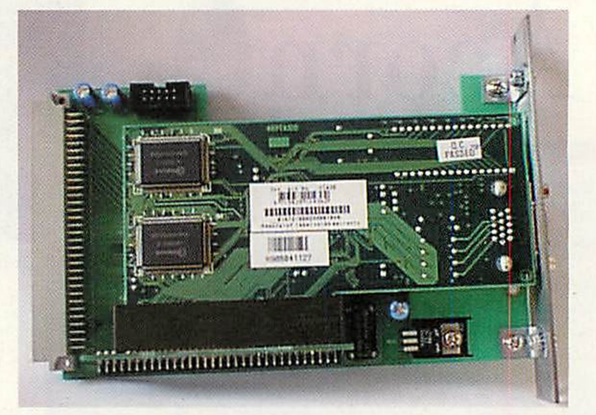






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ViewFinder offers more than just higher desktop resolutions, it offers hardware acceleration of a number of common graphics operations, normally performed entirely in software by RISC OS.
Plug in and go, upgradable firmware with Flash ROM. All the modes you could select on your 'old' machine are still available. Should you need to for games etc, you can revert to your 'old' system.
Produced by John Kortink of Windfall Engineering, available early June.
ViewFinder has currently been tested on RISC OS 4.02, 3.70 and 3.60, StrongARM and ARM710

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On the see-saw

What does Wakefield show-organiser Chris Hughes think about RISC OS?

As I write this article, the Acorn/RISC OS world is going through yet another traumatic period in its history. By the time you read this, hopefully, we will have discovered just what the future is likely to hold for us users.

Ever since 'Black Thursday', I personally have wondered if the operating system we all love would survive the resultant upheaval in the market place. To a large extent it has but at a cost. That cost has been the loss of many devoted dealers who, along with long-standing developers of software and hardware alike, have been forced by economics to join the drift of users away to other platforms.

If you ask yourself why is this happening, we have to look to the real world of business. Dealers have left, or closed, simply because they could not compete realistically with the box-shifters! This is typical of the long-standing British disease of wanting everything for free, or at very low cost, while ignoring the disadvantages this can bring. In other words, buy it cheap and stuff the quality! Some software and hardware peripheral developers could not continue selling into a steadily shrinking market of Acorn/RISC OS users and still make a living. Inevitably, many have dipped their toes into the PC or Mac markets.

As I see it, there is another problem, but one where you can help. Ever since 'Black Thursday', software packages like *Ovation Pro* have reverted back to their author – David Pilling in this example. In one way this can be a good thing since the reduced overheads and motivation of a one-person operation result in more active development. Sadly it also means these developers have neither the time, nor the money, to advertise or promote their product(s) properly.

Inevitably this leads many people to think that the product is either dead, or at best not being developed further, when in fact the exact opposite is true. In consequence it is vitally important that these developers get a chance to promote and sell their products at places like the Wakefield Show. There were a couple of good examples of this at the recent Wakefield show when *Organizer* by Chris Morison, and Paradise Software made a first appearance. Both these developers did not have a high profile before the show, but they most certainly do now.

So what can you do to help them? The obvious thing is to buy their software (including upgrades), their hardware add-ons and to support those Acorn/RISC OS dealers who are still around. Secondly you can help by letting other people know about the existence and availability of these hardware and software products. Finally, visit RISC OS computer shows like Wakefield, which actively encourage small developers to attend, promote, and hopefully, sell their products.

This leads me on to another point, do we have too many shows? Currently there are two major shows at Wakefield and Epsom. These are supported by one day events at Bristol, St Albans and Birmingham. It costs developers and dealers both time and hard-earned money to attend these events. Obviously being present at these shows has the advantage of letting people know that the developers and dealers still exist.

Major shows also provide a valuable showcase for launching or previewing new products. The big disadvantage, as I see it, is the fact that having five shows during a year, dilutes the attendance figures and increases costs for exhibitors and visitors alike. Considering the shrinking number of RISC OS users can this really be justified?

Happily it's not all doom and gloom. We have companies like RiscStation producing innovative new models, pushing back into the Australian market, as well as developing innovative systems for EPOS facilities and music. Microdigital are pushing into new educational areas. While Castle still manufacture traditional models from the Acorn range, but enhanced by exciting updates such as the Kinetic card.

Last, but not least are Millipede working quietly away in the background on the 'Imago' motherboard (now nearing the production version). In addition to their existing professional broadcast markets, they have set up a partnership with Cerilica aimed at the graphic art profession. This involves the revolutionary Nucleus design concept first seen at the Wakefield show. And, of course, a portable is planned for early introduction by RiscStation.

But here's a sobering thought, many of the above and future developments will rely heavily on RISCOS Ltd, and to some extent Pace, getting their acts together. Necessary development work to allow hardware independence of our beloved operating system is vitally important. Obviously this will involve both money and resources. Sadly both seem to be in short supply at the moment. Hopefully some of these problems may be resolved by the time you read this.

What about RON (RISC OS on the NetBook) you may ask? Well, personally, although I like the idea, I would probably prefer a colour RISC OS portable before a Netbook computer with RON. RON and the Netbook should really be aimed at a different market – those people not yet using the RISC OS system. Otherwise an increasing range of computer models will be competing for the small market place of users. Indeed the hardware companies need to start looking more urgently at new markets, other than education in this country, and especially targeting overseas markets. END



News for nerds

"Stuff that matters" is how they bill it, and online Web magazine *Slashdot* has plenty of it. The major part of its content consists of news and editorial stories e-mailed in by contributors, and comments on them from readers. At any given time *Slashdot* claims the database contains over 40,000 comments, of which a thousand might be in response to a single story. Obviously some will be gems but most will be dross.

Standard *Slashdot* pages can be very long and contain complex tables which may take some browsers a lot of time to render, so it's worth registering – which is free – and customising the system for speed. Readership numbers are such that Web sites discussed on *Slashdot* have been subjected to the 'Slashdot effect' where the number of subsequent accesses bring them to a halt.



Don't feed the Slashdot Trolls

Slashdot has a system of user Moderation where the readers themselves are chosen to assess other readers' posts and comments for quality, appositeness and interest. Each comment is given a notional score which can be adjusted by the Moderators.

You can choose the quality threshold of replies from a drop down list before you start reading the thread. If you want to read only the original items, you set the threshold to zero.

This is a marvellous idea that should have been incorporated into the Usenet newsgroups as soon as they graduated from academic circles.

The comment scores are linked to one-word descriptions; high scores have tags such as *Informative*, *Insightful*, *Interesting* and *Funny*, while low scores rate terms like *Redundant* and *Troll*. So it's easy to eliminate the nerds and read the stuff that matters.

ISPs fry new fish?

By the time you read this, independent ISPs should just be re-announcing their unmetered Internet call tariffs that can offer real competition to British Telecom's *Surftime*. A new acronym has been introduced into telco parlance; FRIACO, but it's nothing to do with online fish-and-chip shops. Flat Rate Internet Access Call Origination will now compete with the wholesale version of *Surftime* on an equal footing, as BT finally allows other ISPs competitive unmetered access to its network.

Perhaps the completely overwhelming demand for 'free' calls to the Internet should have been foreseen by the ground-breaking companies such as NTL, *Redhotant*, *Liberty Surf* and *LineOne*, given the British liking for "something for nothing" deals. Before *Surftime* and FRIACO, although home users were given unmetered access, the ISPs were still paying BT by the minute for the calls. These troubled companies couldn't sustain idle port hoggers for long, and a series of time restrictions, account terminations and service withdrawals followed.

We can thank *The Campaign for Unmetered Telecommunications* (**www.unmetered.org.uk/**) for its part in the approval of FRIACO by OFTEL. It will be interesting to see how long it is before actual access to the Internet becomes a trivial matter that's universally "always-on" and completely taken for granted, and whether enough content and revenue-generating online activities are available to make it all worthwhile.

Don't hold your breath.

In brief

Cache machine

Tony Lindop's update version of *Cacheman* by Robert Hampton allows *Fresco©* browser users to inspect, save or delete files stored in its Web Cache.

***Fresco's* cache contains information *Cacheman* uses to recreate locally the structure of previously viewed sites for Filer-style offline browsing.**

A long-filename-supporting filing system such as RISC OS 4, *raFS* or *X-Files* may be required. *Fresco's* cache format has changed in recent versions 2.02 and 2.13, so Tony's update version is required, but both versions are available from Tony Lindop's Web site.

Cacheman
www.lindop.demon.co.uk/PROGRAMS/index.htm

Bang go names

In the 1980's Internet dawn, each computer on the net was given a textual name for easy access, hiding the confusing IP numbers. In 2000 the Web has turned full circle with the introduction of *Bango* numbers.

Bango.net claim that numbers are the easiest way of accessing pages on the Internet, especially from mobile phones.

Linking Web pages to phone numbers reduces the chance of misspelling URLs, which can be more compact. *Bango* numbers are from 1 to 50 digits long, preceded with a ! (Bang in the US, Pling to us) from around £20 a year to £10,000 each depending on choice.

One million free numbers are offered for private use, so visit http://bango.net/admin/free.asp to get yours.

Contacting me

David Dade:
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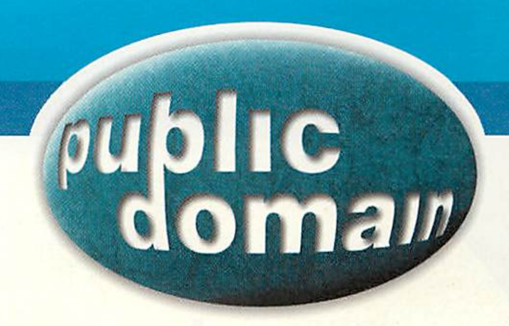
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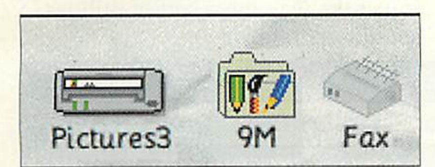
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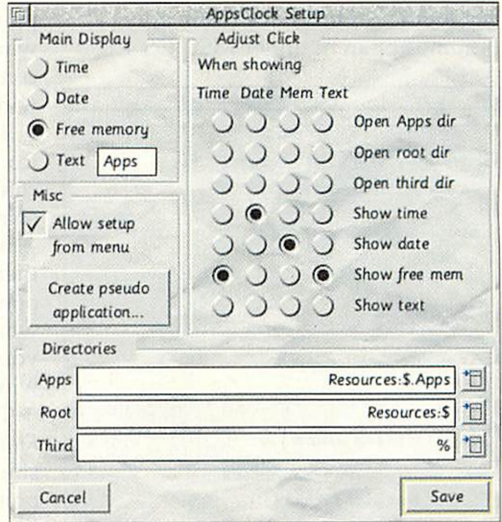
Clock it to me

One of the programs of considerable vintage is Andrew Booker's *AppsClock*. This is a silly name because it's much more than a clock though at first sight it appears to be just another of those programs which sticks a clock on the icon bar.

The difference with *AppsClock* though is that the clock replaces the wording under the *Apps* icon. If, like me, your iconbar is cluttered enough already without adding a clock to it this is jolly handy – it's also unobtrusive.

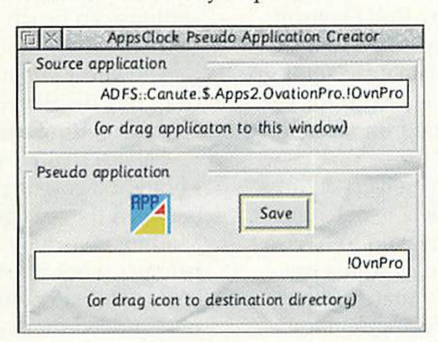


There's more to *AppsClock* than this though. It can be configured to either show the date, the amount of free memory left or any short piece of text of your choice. It can also be set up to cycle through them when you click Adjust on the Apps icon. I have mine set up so that it shows free memory, with a single click showing the date and a double-click showing the time. After a short while it returns to showing the free memory.



The thing for which I find *AppsClock* is incredibly handy is creating 'pseudo-applications' which run real applications from elsewhere on your drive. They are similar to what is normally found in the *Resources:Apps* directory.

Creating one is simple: Just click on the icon in the *AppsClock* set up window, drag an application to the 'source application' field of the new window and then drag an icon from there to a directory. A pseudo-application is saved which runs the real application when you double-click it.



Usually a click with Select on the Apps icon opens the root of the *Resources* filing system. With *AppsClock* loaded you can change this so that another directory is opened instead.

So long as you don't change the configuration you can still get at the root of the *Resources* filing system by selecting "Open $" from the Apps icon's menu.

There are plenty of other programs which do all the things of which *AppsClock* is capable but none that I've ever seen is so convenient and simple to use and one of them uses so little memory either: *AppsClock* uses just 5k.

"John Gaunt writing this month, standing in for Paul while he's on holiday. So, following in his tradition, we'll take a look at some of the utilities that I use which just make my life a little easier. Some of these programs have been loading at start-up for so long that I've almost forgotten they're not part of the OS.

"I get most of my PD programs these days from the Internet. A good place to start searching for specific items is at **www.cybervillage.co.uk/acorn** and then follow the Software link. There you will find lots of links to either program files or to other sites containing PD software.

"However hunting around the Net for particular items, especially if you don't know exactly what you're looking for, can still be a pain in the neck. There's still a use for bulletin board systems for acquiring software.

"Arcade BBS (020 8654 2212), run for over 10 years by Dave Coleman and David Dade, is a good place to look. Everything's in one place for a start. The two Davids are always pretty helpful if you can't find just what you're looking for. Nothing quite like the personal touch."

Updating the links

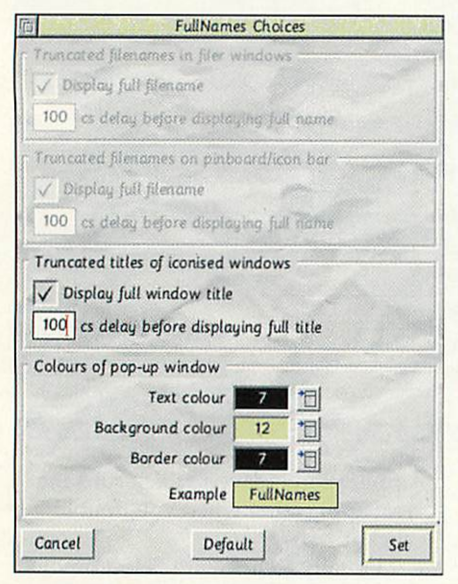
A number of people are busily working on different ways to publicise RISC OS and make people more aware of it's benefits, especially outside the traditional market.

One such initiative is **www.riscos.org** which I have registered in order to create a comprehensive RISC OS portal for all users. As a first stage to this, I've moved my RISC OS links page which was formerly located at **www.vigay.com/riscos/links.html** to it's new location of **www.riscos.org/links.html**

I've also converted the whole lot into a cross-referenced, searchable database displaying the whole list (as previously) or enter a keyword and the server will return a list of matching links – much more useful with the whole set of 700+ links.

What's in a name?

A far more recent utility I've installed and which sits in the background most of the time doing nothing is another of Andrew Booker's, called *FullNames*. The capabilities of this have really only become apparent under RISC OS 4, which I don't yet have, but it's still a good thing to have under earlier versions of RISC OS.



When running *FullNames* on pre-RISC OS 4 machines keeping the pointer stationary over an iconised window pops up a little window containing the full text of the window's title bar.

If you've got lots of windows iconised on your Pinboard and you can't tell one from another – which is something which often frustrates me – *FullNames* will help you distinguish them. No longer do you have to open each window in turn to find what you're looking for. As soon as you move the pointer the info window disappears.

If your machine has RISC OS 4 *FullNames* will behave similarly when the pointer is held over a file name or icon. RISC OS 4 truncates file names to fit in directory windows. If you've got a number of files all beginning with the same text it can look as if all the files have the same name. *FullNames* will help you tell them apart. It will also work with truncated names on the Pinboard or the iconbar.



The colours used by the program's windows and the delays before the information windows open are configurable. If you try to run *FullNames* when it is already running its configuration utility runs instead, which is handy.

FullNames, just like Andrew's *AppsClock* is a module which more or less seamlessly integrates itself with the OS. Unless you use its facilities you won't even know its there which is just the way these sort of utilities should operate.

Entering the gamma quadrant

A program which I use a lot is *Gamma* by Rob Davison. Gamma lets you adjust the colours shown on a Risc PC's or A7000's monitor either to suit your taste or to set it up 'properly', whatever that may mean. I've used it for years when I've been preparing images intended for display on the Macs at work.

Macs have always seemed to me to have very lightly coloured screens when compared to RISC OS machines and most PCs. Technically, I think they're said to have a high gamma function. *Gamma* allows me to adjust my Risc PC's screen display so that it closely matches the Mac's. That way I know what I am preparing will look like on the Mac.

Gamma works by letting you drag Bezier curves around, one for each of the red, green and blue components of your display so that you can alter their relative brightness. The settings can be saved in small files so that you can return to them later.

The latest version of the program comes with a drawfile, displayed when you click a button, to help assist in setting up your monitor correctly.

Gamma really came into its own for me, though, when I bought a colour printer. There's a big difference between the way printers and monitors display colours. Monitors work by adding colours to black whereas printers work by subtracting them from white. The result of this is that colours often don't look the same on the two. Indeed there are some colours which cannot be displayed on both.

When I first used a colour printer I found the output very dull and the colour balance different when compared to what I was seeing on the screen. However, using *Gamma* I have managed to create a setting, which I have saved, that makes the output from my monitor more closely resemble that which comes out of the printer. The screen still looks brighter but at least the colour balance and contrast can be made similar.

My printer's colour output has improved enormously since I started using *Gamma* in this way. Photos especially look much more lifelike with more intense colours. It's taken a lot of the guesswork and expense out of creating and printing colour images.

Perfect tiles

This month, I'd like to share with you a technique for making perfectly-tiling backdrops for web pages, starting from a vector design of any size and shape. It depends on a blindingly simple piece of arithmetic, but the results it provides can be quite impressive.

Some considerable time ago, I designed a very simple site for an antique furniture retailer in Dorking named *The Howard Gallery*. I wanted to provide a backdrop to each page reminiscent of the subtle patterning often to be found in the seat fabrics of chairs from the period in which the shop specialised.

Having designed an ornate logo (Figure I) – I say "designed" loosely here; whoever crafted the font takes the credit for pretty much the whole thing – I wanted to make use of it within that design, and took the *H* as the basis for the tile, with the intention of wrapping it around itself to produce a seamless pattern.

A serious amount of experimentation using different offsets, scaling and rotation produced a tile effect that I felt worked well – a design factor that all variations on this technique will probably need. The effect wraps the design across the tile in a similar way to the way the exits at the sides and top of screens in *Pacman* work: exiting from the left brings you back in on the right. As with most design ideas, this can produce some truly awful results.

The final version made use of a tile measuring 400x300 pixels (the tiles don't have to be square). The beginning stage was to drop the *H* design (an *Artworks* file) onto the canvas in *Photodesk*, making sure that when rendered the shape would occupy the mask layer. I set the scaling at 50%, and offset the design 200 pixels to the right and 150 pixels up (Figure II).

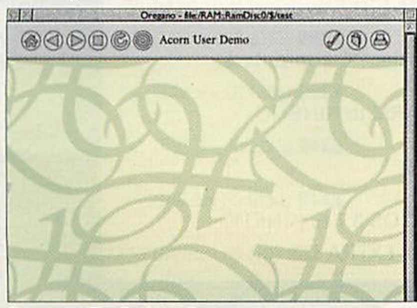


Figure X: The final result

This meant that, in order to tile properly, the part of the design that had been cut off at the top of the tile needed to be restored to the bottom of the tile (and similarly with the part of the design to the left). The positioning of the design needs to be pixel-perfect to avoid noticeable joins between tiles on a Web page background, and this is achieved using a simple formula:

To create a wrap vertically, the new Y offset is the original offset minus the height of the image, keeping an identical X offset and scale.

I made life easy for myself on this image – the original offsets are half of the tile's dimensions along either axis. So, the new Y offset is simply the negative of the original (Figure III). For each of the two instances of the design, I needed to also create the horizontal wraps, again using the same rule as above, with suitable X and Y substitutions. Figures IV and V show this taking place.

Despite having placed the image four times, I've actually only given myself a single complete version – one that butts against itself and is offset against the edges of the web page, but a single repeating H nonetheless. To get the effect I wanted, I had to introduce a complete H a second time.

I dropped the design onto the canvas, rotating it through 180°, and placing it to create an interesting overlap with the existing mask (Figure IV). The design didn't spill over in the vertical direction, so I only needed to compensate for the wrap in the X axis. Using the formula, 100 pixels (the original offset) minus 400 pixels (the width of the image), gives a new offset of -300 pixels (Figure VII).

That completed the design. The last stage was to invert the mask (Figure VIII), and colour the pattern created by the mask (Figure IX), creating an indexed palette and saving out as a GIF image. The final, repeating pattern as a web page background is shown in Figure X. It's a little heavier in contrast than the real thing for the purposes of magazine reproduction, but shows how a simple idea can produce complex-looking results.

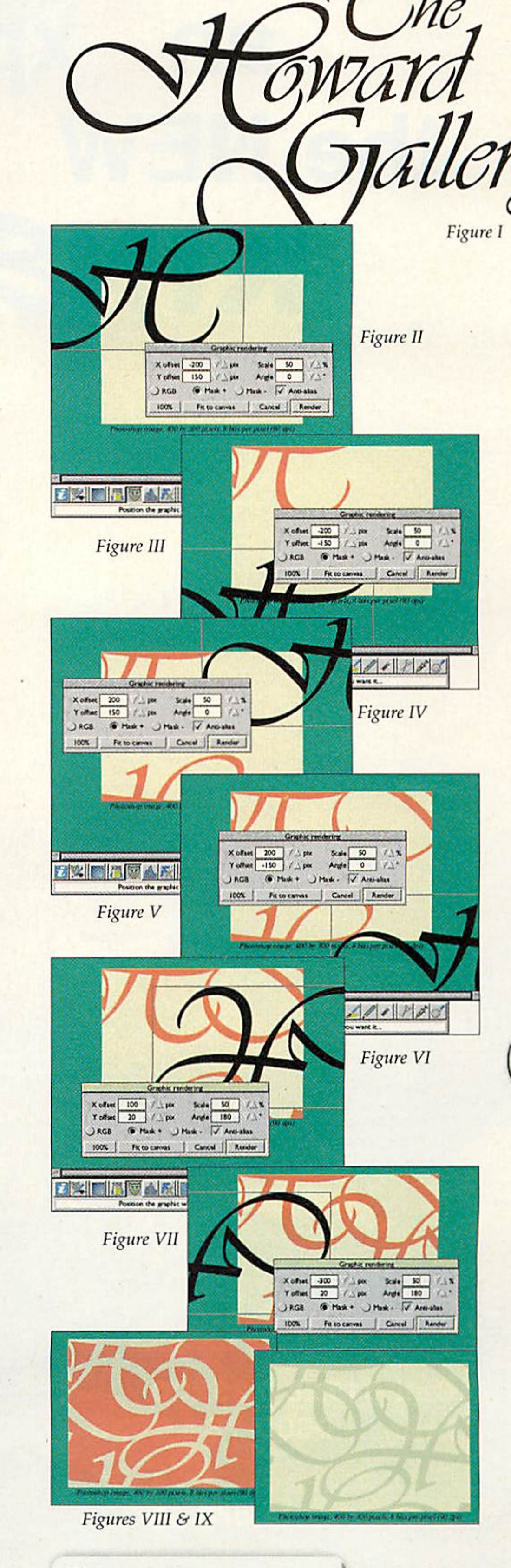


Figure I

Figure II

Figure III

Figure IV

Figure V

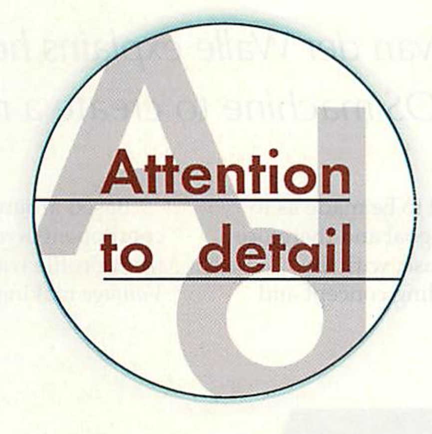
Figure VI

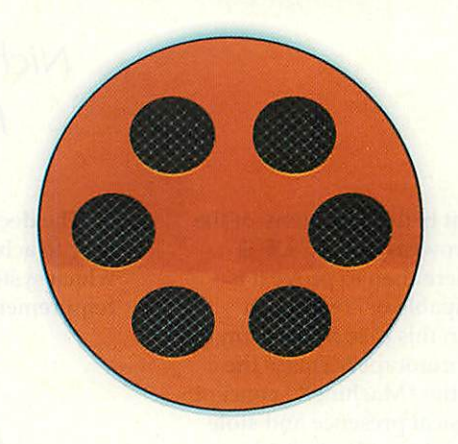
Figure VII

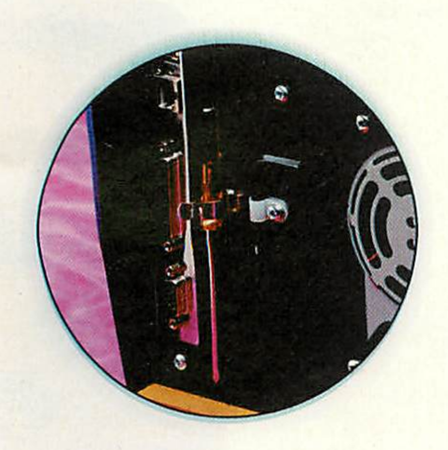
Figures VIII & IX

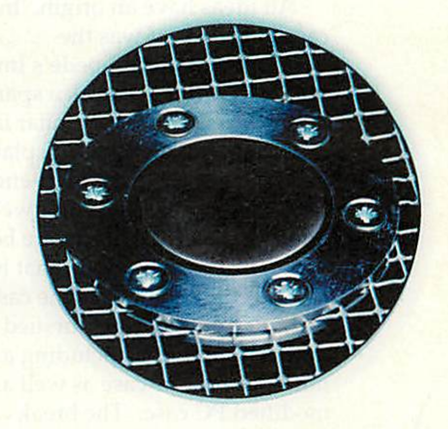
Contacting AU

Andrew Green:
graphics@acornuser.com

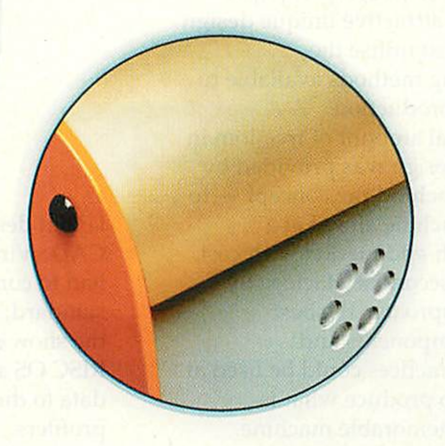












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Centre of attention

Nicholas van der Walle explains how it took a RISC OS machine to create a new one

What better testimony of the prowess of RISC OS is there than to prove it is capable of creating an offspring — in this case in the form of the Nucleus prototype? This is the story of how the "MachineX" concept gained a physical presence and stole many double takes at Wakefield.

All ideas have an origin. In the case of *Nucleus* it was the development of Millipede's Imago motherboard that struck a spark. Apple (arguably very similar in philosophy to the RISC OS platform) had a "life-style look" high-end machine, so why shouldn't we?

With the actual hardware being developed elsewhere, all that had to be concentrated on was the case. Various options were pursued for a number of months including a minimal volume case as well as a modified PC case. The break came when a sketch on a scrap of paper portrayed an attractive unique design that would best utilise the manufacturing methods available to low volume production.

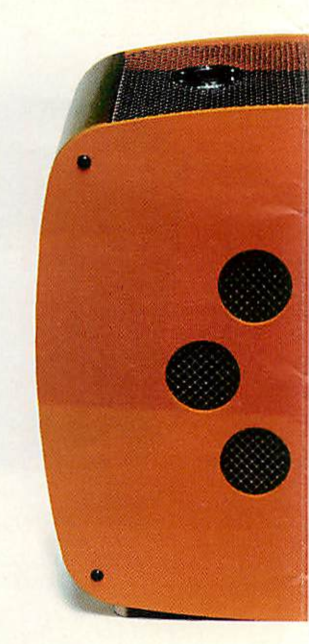
An unusual amount of freedom in production design was provided by the thinking behind the concept — to produce a machine aimed at a specialist high-end market with cost only being a secondary factor. By taking this approach, the best materials, components and production practices could be used at every stage to produce what is hopefully a memorable machine.

Now for RISC OS...

These principles and ideas are all well and good but ultimately meaningless without something to show for it. Come March 2000 the prototype was given the green light, by now officially named Nucleus, with a target surprise showing set for the Wakefield Show 2000. This represented a very tight deadline of two months armed with only an initial sketch.

The decision had to be made as to how to achieve this goal and therefore which system(s) to use, with the requirements including concept and layout design, 3D modelling and CAD. Virtually every file generated had to communicate with industry standard; renderings to be printed for the show stand, previews sent to non-RISC OS aware magazines and CAD data to directly drive metal laser profilers. With a minimal cost outlay, there could only be one such system.



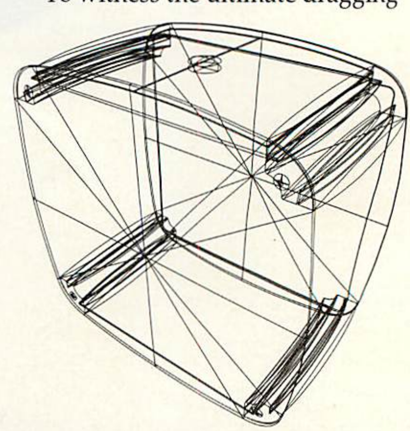


Imagining the result

Before any further developments were to take place, it had to be ensured that the prototype would look right. The initial sketch gave a good idea, but more realistic images were required which would serve the purposes of being both good publicity material and provide a form of goal for the engineering design to head towards.

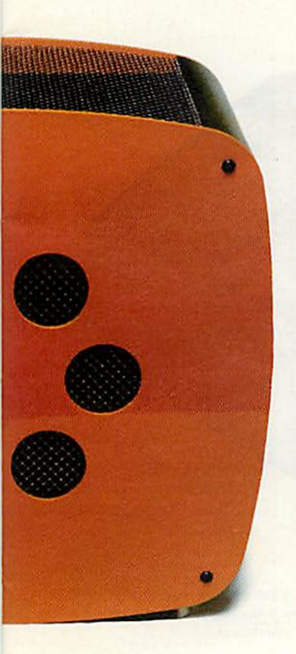
Based around rudimentary component layouts, a rough side and front profile was created within *Vantage* making good use of guides which allowed for accurate scaling and positioning. Because *Vantage's* native format is the Drawfile, the profiles could be loaded directly into *Euclid* for 3D extrusion to take place.

To witness the ultimate dragging



and dropping between applications is still a wonder if you've every struggled to do such simple tasks under other operation systems. The resultant 3D vector extrusion was saved back as a Drawfile straight into *Vantage* — the complete process including further layout in *Euclid* only taking a matter of minutes — and placed in a non-editable layer ready for rendering.

In order to make the *Vantage* illustration as realistic as possible a number of then-new features were utilised. For the 4mm solid aluminium blue side panels, a non-linear distorted radial fill was employed which removed the highly



artificial "pin-point" classic radial fill look.

The extruded aluminium gold corner pieces also used highly distorted (almost pseudo bi-linear) radial fills with an overlay of a



transparent textured sprite to give a brushed metal effect and topped off with a plain transparent highlight. A better view of this image may be found on the Cerilica WebSite where further background effects were also used. See **www.cerilica.com**.

A spin-off of the illustration was to use it as the demonstration image at the show after being integrated into the prototype Imago board kindly lent to us by Millipede. At a resolution of 2048 x 1536 in 24bit, this was beyond the highest screen-grab resolution possible on a RiscPC, so *Vantage* was again used to natively save as a sprite to this high level of detail regardless of physical memory space. This

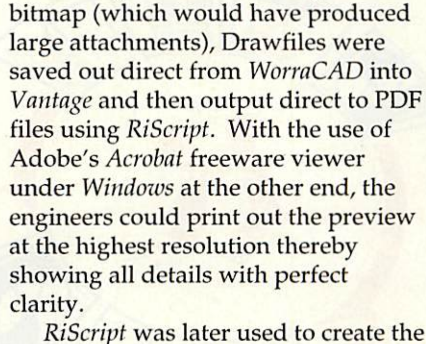


image was then supplemented by some further details using *Photodesk 3*.

Adding substance

With an accurate view of the final result and time pressing on, *WorraCAD* was used to generate the full technical aspects of the prototype. DXF file output was used to convey the profiles to the manufacturers whilst the necessary previews (so that those who were making the parts knew what it should come out of the machine like) were faxed over thanks to David Pilling's *ArcFax*.

When it came to the complexity of certain internal components, fax resolution was not adequate enough and with time pressing it was decided to e-mail the previews. Rather than



converting the CAD drawings to a bitmap (which would have produced large attachments), Drawfiles were saved out direct from *WorraCAD* into *Vantage* and then output direct to PDF files using *RiScript*. With the use of Adobe's *Acrobat* freeware viewer under *Windows* at the other end, the engineers could print out the preview at the highest resolution thereby showing all details with perfect clarity.

RiScript was later used to create the files necessary to send to the local print bureaux so that the show posters and flyers could be produced. Thankfully PDF files are now accepted by virtually all printers due to their ease of use, whereas PostScript files were often the cause of many problems especially for high street shops.

Showing off

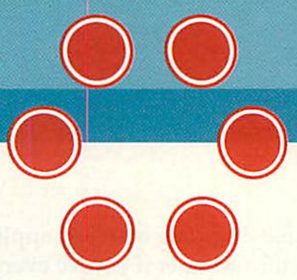
With the first prototype having been readied two days prior to the show, attention turned to the internet. As very few people knew of the existance of the Nucleus prototype, we readied ourselves for the raft of questions that were bound to (and did) reach us after the event.

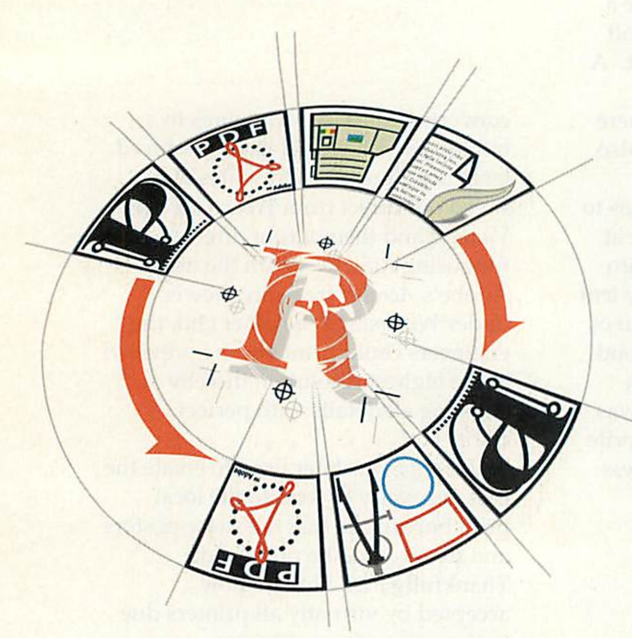
A special new section was created on the Cerilica Web site to cater just for the Nucleus prototype. Primarily using RComp's *HTMLEdit*, for the generation of Web code, *Vantage* was used to create all the imagery to go with it. When it came to photographs which had components that had to be "cut out", *Vantage's* dynamic vector sprite clipping allowed for quick and easy chopping which would be edited at any point (as the original image remains in tact).

Direct sprite output from *Vantage* was saved into *Photodesk 3* where high quality 256 (or lower) indexed colour palette sprites were output into the excellent *InterGif 6* for conversion to the Web-standard GIF.

And the future?

The Nucleus machine will only be available after the completion of the Imago motherboard. In the meantime more development of the case will take place, refining certain areas and using new RISC OS packages to aid the cause. I already have my eye on a few. Until then, please stay updated by visiting **www.cerilica.com**.





RiScript

***The* PostScript® and PDF imaging package**

Since the re-launch of RiScript at the beginning of 2000, it has become a great success with hundreds of satisfied users the world-over. RiScript gives RISC OS users the chance to generate and view the now industry-accepted Adobe® PDF file format allowing you to swiftly and accurately exchange a document's content, layout and design with alternative systems such as Windows™ and MacOS™.

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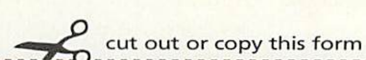
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The rotary knob now also allows intuitive control of the rotation of objects within Vantage!




Note: this picture shows a special-order colour coded MMK which may be offered with Nucleus machines. All other MMKs will be supplied in standard beige.

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Card with a view

John Mason gets fired up with hot graphics

Possibly the best kept secret for many years in the RISC OS world – and described by RISC OS guru Dave Walker as "the most significant new product at Wakefield 2000" – we have finally managed to get hold and test the Viewfinder card.

When the Risc PC was launched its graphics were impressive and up with the very best PC users could get, but it has fallen significantly behind. With the launch of ViewFinder by Windfall Engineering of Holland, this has been rectified as its performance can exceed the specifications of many 19" monitors.

ViewFinder was first demonstrated in the UK on the CJE Micro's stand at the Wakefield 2000 Show in May with the demonstration cards arriving in the country the day before the show. First production units have now been in users computers for a while and, in general, satisfying noises are emanating.

The card is the first product from Windfall Engineering, a small company from The Netherlands. John Kortink, the man behind Windfall, has programmed extensively on the Acorn/RISC OS since the early days of the Atom and Beeb, and will be known to many RISC OS users for a variety of graphics applications including Creator and Translatr. Before branching out on his own last year, John had spent two years developing a software emulator for a high-end graphics chip, very useful experience to have when it came to this new project.

Modes supported

True colour (32-bit)

1600 x 1200	82Hz
1280 x 1024	107Hz
1024 x 768	135Hz
800 x 600	135Hz

High colour (16-bit) and 256 colour (8-bit)

1920 x 1440	65 Hz
1800 x 1440	68 Hz
1600 x 1200	88 Hz
1280 x 1024	107 Hz
1024 x 768	135 Hz
800 x 600	135 Hz

Not all monitors can display all these modes and/or use these refresh rates

On the cards

The hardware consists of two cards, a podule which provides the necessary hardware interfacing and an AGP Graphics card which has a 15-pin high density socket into which you plug your monitor. The podule is rather bereft of components, with a 5000 gate CPLD (Complex Programmable Logic Device), 64KB Flash ROM and a few passive components including a socket for the AGP card, which fits neatly above the podule, so that it still only occupies one podule slot.

The card is programmed by Windfall using the 10-pin connector at the 'top left' of the card and all the software to control it is stored in the Flash ROM. It works fastest in a DMA slot, supporting the fastest speed available of 8MByte/sec. AGP cards have become the de facto standard graphics card for PCs and Macs and this one is an ATI Xpert98 RAGE Pro Turbo, other AGP cards are not supported, but see my comments below. The ATI Xpert98 is clocked at 50MHz, contains 8MByte SDRAM, 135MHz memory clock, 75MHz core clock and a 270MHz pixel clock.

A few users have encountered problems in certain as yet unidentified hardware set-ups, this causes the AGP acceleration engine not to initialise correctly, John is investigating this, and hopes for a fix shortly. The AGP card does not understand the RISC OS concept of hardware scrolling, so all scrolling operations are performed in software which is a bit slow.

Software driver

Once the rather clever hardware interfacing had been designed, John Kortink turned his hand to the necessary software to drive the card which intercepts all screen writing at various levels, this is important when it comes to the speed of redrawing, more of which later. The latest, version 1.16, which I downloaded on the day I finished the review appears at a quick glance to fix nearly all known problems.

John plans to continue making more graphical operations use the hardware acceleration. He has also been getting assistance from RISC OS Ltd and Pace PLC which bodes well for better native support in the Operating System.

The ViewFinder driver software is all stored in the onboard flash ROM which can easily be user updated and new versions are being released via Windfall's Web site for easy downloading.

Looking to the future Windfall engineering have built in the opportunity for further development, a long term goal is support for an AGP card with DVD decoding, existing users would buy a new AGP card and software upgrade from Windfall.

Compatibility

The AGP card offers hardware acceleration of some graphics operations with up to a 20 fold speed improvement – but don't get carried away by excitement, unfortunately RISC OS can't take advantage of this all the time without rewriting core parts of the operating system.

AGP cards have no comprehension of anti-aliased fonts, this means that the 'painting' of fonts is done by the time-consuming process of passing a bitmap of the font manager's output across the podule bus to the AGP card – the problem is exacerbated when the font has to be blended to the background colour. Those graphical operations intercepted at a high level can be passed to the AGP cards accelerator but not all software uses the high level routines – the low level interception increases compatibility, but can be slow.

Prior to version 1.16 of the firmware menus such as a large font list in Ovation Pro or Impression

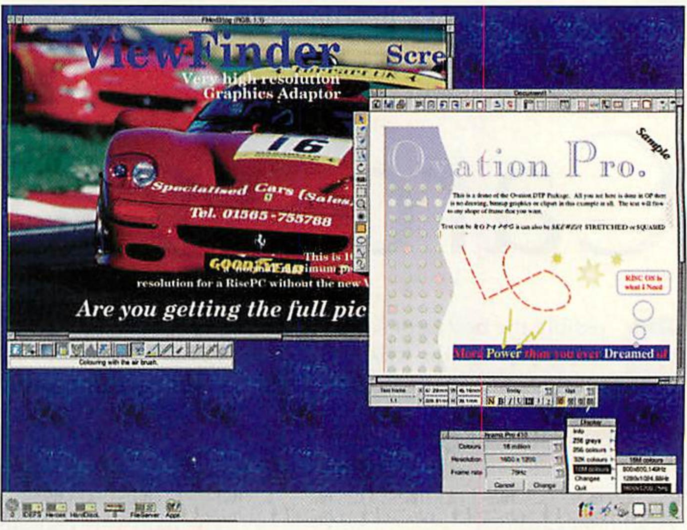
could be painfully slow to appear especially in 16M colour modes but with 1.16 these appear almost instantly as normal. Scrolling a window of outline fonts is a bit slower than the same mode with VIDC output, and this is one area that John expects to spend time working to improve, but it is currently perfectly acceptable.

On balance with some things being slower and some faster, you may not notice much difference, but it does depend on what you are doing.

Compatibility of programs that work in the Desktop should not be a problem; screen modes of less than 8 bits per pixel are not yet supported. With firmware release 1.16 the PC card works in a window, but I was unable to get single-tasking to work which I had previously done with a slight fudge on 1.15, of course by the time you read this there will have been quite a few more versions so compatibility should only improve

Programs that do very naughty things with the screen display such as many games are unlikely to be able to utilise the card. Irlam's RiscTV can't be used in the new high res modes and in the low res modes the 'Keying module' can't be used. The latest release still does not work with Sibelius, but should do soon it is hoped.

For those programs that are not ViewFinder compatible then, with the monitor connected to the motherboard's monitor socket, you can start the computer with the 'V' Key held down, and the computer will run as if the ViewFinder wasn't fitted. This is where a monitor with two inputs could be very useful. The card works in all Risc PCs with RISC OS 3.60 or greater including Kinetic. It has not been tested on an A7000 yet.



You get what you see

When BBC Micro monitors were 14in and only displaying 640x256, 50Hz was considered an acceptable refresh rate, but increase the number of scan lines and/or the monitor size and it becomes totally inadequate. It is generally accepted that 70Hz provides a reasonable refresh rate and with the ViewFinder capable of 82Hz or more in up to 1600x1200, it will normally be your monitor that provides the limit – what some people find flicker free others do not.

So do I need a 19in or 21in to make it worth while? Well it depends what you want, for a few with limited space available a top-end 15in monitor from Sony or ADI that support 1280x1024 could be used, a 17in monitor like the popular Iiyama Pro 410 which can support 1600x1200 with 16 million colours at 74Hz is quite effective, but to take full advantage of the ViewFinder you will need a 19in or 21in such as the Iiyama 19in Pro 450 which can run 1600x1200 @ 82Hz.

Support

A very useful mailing list has been setup. This has allowed users to report problems, many of which have been fixed in the next firmware release a week or so later. To subscribe to the ViewFinder list go to **www.egroups.com/invite/viewfinder** and click the "JOIN" button

CJE Micros have also set up a useful 'ViewFinder Hints, Tips & Utilities page at **www.cje.co.uk/viewfinder/**

Summing up

Having received one of the first production batch cards at the end of June, I have now had six weeks to play with the card, I now use as standard 1600x1200 16 million at 75Hz on my Iiyama 400, with occasional uses for 1920x1440 32K colours which is very useful for layout checking when DTPing.

Do you need it? Some considered a BBC Master with a Multisync monitor all they would ever need, but history shows that if you are given more power, capacity or resolution, soon you can't live without it.

If you could do with more pixels on the screen, more colours or a higher refresh rate, the ViewFinder will do it for you and most of time all of those at the same time. Users who need ultra high end graphics will have to wait for the Imago/Nucleus (and have the bank balance to buy a suitable £2000 plus monitor – ouch.)

With continued development of the software, greater speed of drawing is promised. For what it offers I think the price is such that Mr Kortink has a winner.

Thanks to Windfall Engineering and CJE Micros for help carrying out this review.

Hardware acceleration

Rectangle fill, random

Colours	VIDC	ViewFinder	Factor
256	19.69	1.45	13.6
32K	34.81	2.39	14.6
16M	64.84	4.30	15.1

Rectangle fill, full screen

Colours	VIDC	ViewFinder	Factor
256	145.87	8.50	17.2
32K	282.20	16.79	16.8
16M	551.80	33.59	16.4

Rectangle copy, full screen

Colours	VIDC	ViewFinder	Factor
256	197.20	17.10	11.5
32K	394.90	35.10	11.3
16M	786.50	73.50	10.7

Rectangle copy, random

Colours	VIDC	ViewFinder	Factor
256	25.17	2.40	10.5
32K	47.27	4.56	10.4
16M	90.59	9.16	9.9

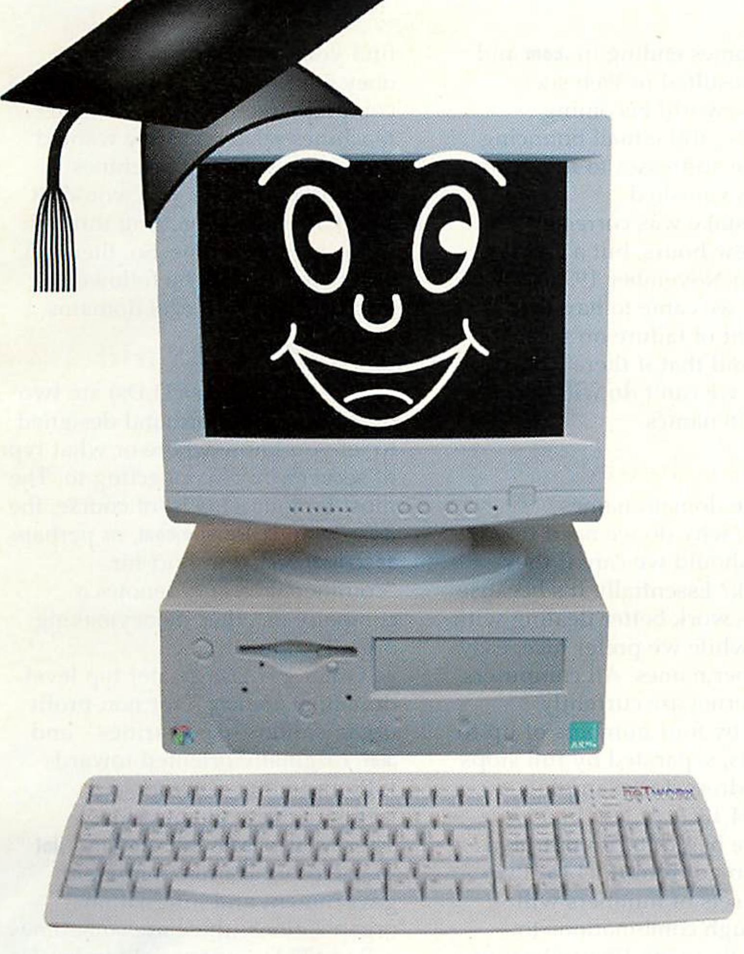
Timing are seconds per 10,000 operations test results from Windfall Engineering Using 800x600 16 million colours

Product details

Product:	Viewfinder
Price:	800 Dutch Guilders (about £235) including 17.5% VAT
Supplier:	Windfall Engineering, Aawal 53, 5211 PS, Den Bosch, The Netherlands.
E-mail:	kortink@inter.nl.net
Web:	http://web.inter.NL.net/users/J.Kortink/



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What's in

The Internet, it is said, was designed to be indestructible. Back in 1962, at the height of the Cold War, Paul Baran of the RAND Corporation (an American military think tank) came up with the idea of breaking data down into small packets which would be forwarded from computer to computer until it reached it's destination, even if that meant re-routing around computers that had been destroyed by enemy attack.

And so the Americans created the perfect means of communication, which would never suffer from outages, where data would just find another route until it eventually reached it's final destination.

Nice theory. Shame reality had to get in the way.

Brushing aside the fact that, as with many modern American stories, it was actually the British who first produced a working packet-switched network (in the National Physics Laboratory in '68, a year before UCLA), we all know that the modern Internet is slightly less reliable than was first envisaged.

And in July of 1997 it all started to grind to a halt because one corrupt file was uploaded to a single machine in America – the machine which held a database for domain names ending in **.com** and **.net**. This resulted in Web sites around the world becoming unavailable, and e-mail bouncing back as the addresses to important computers vanished.

The mistake was corrected within a few hours, but a similar problem in November 1998 shows how close we came to having a single point of failure on the Internet, and that if there's one thing that we can't do without, it's our domain names.

Number theory

So why are domain names important; why do we need them, and why should we care if they don't work? Essentially it's because computers work better dealing with numbers while we prefer nice, easy to remember names. All computers on the Internet are currently identified by four numbers of up to three digits, separated by full stops – an IP address, for example 194.131.104.13.

As these begin to run out plans are afoot to go from IPv4 to IPv6, where six sets of numbers will allow enough combinations to allow you to assign IP numbers to all your computers, your fridge and even your light switches for a completely networked future.

Even with just the four numbers though (this numbering system is known as *dotted quad notation*), it'd be a little tricky trying to remember all your favourite Web site addresses, especially for someone like me who has problems remembering his own 'phone number. So, we name computers for convenience.

It's not quite as simple as just calling your machine after your cat or after your favourite *Buffy* character and hoping for the best however; so that other people can find your machine you have to obey a set of rules. If everyone had complete free reign to call their machines whatever they wanted there'd be so many machines named *Willow* that you wouldn't stand a chance of getting through to the right machine. So, there's a strict hierarchy to be followed, starting with top level domains.

Top of the World

Top level domains (TLDs) are two or three letter shorthand designed to let you know where or what type of server you're connecting to. The most famous TLD is, of course, the **.com**, as in **lastminute.com**, or perhaps **acornuser.com**; it's short for "commercial", and denotes a company or other moneymaking organisation.

Other gTLDs (greater top level domains) are **.org** – for non-profit organisations like charities – and **.net**, originally oriented towards ISPs and other network infrastructure organisations. There's also **.edu**, **.mil**, **.gov** and **.int** TLDs for educational, military, government and international organisations (these are sometimes called sTLDs, or special top level domains).

These three letter domains are very American-oriented however, and we should all really be using coTLDs (country top level domains), for instance **.uk** for the United Kingdom, **.nz** for New Zealand, **.nl** for the Netherlands and so on. Usually these are further restricted by having subdomains that denote the organisation type in a similar style to the gTLD system, for instance **.co.uk** is for companies in the UK, **.ac.uk** for academic institutes (mainly universities) and so on.

As you've probably gathered, you have relatively little choice

n a name

Richard Goodwin goes into the words

about what you put on the end of the domain name, but you get more control over what you can have as you move along to the left. After you've decided what type of top level domain you can use, you can generally choose whatever you want to go before it. There are, of course, catches:

You have to register it. Not only does this cost money, but also you have to be able to set up a computer so that everyone else knows that this is your domain name. And you can't use anything that's already in use. Finally, you have to stay on the right side of the rules, which can mean butting heads with someone else in a court of law.

Pay your money...

First things first, registering a domain name. Once upon a time this was free, but despite the fact that the NSI was supposed to be a non-profit organisation it started charging for domains in 1995. It's virtual monopoly over registering gTLD domains has thankfully been broken of late though, and so there's much more competition and hence better prices available now than just a year or two ago.

So, it's quite easy to pop along to somewhere like **www.networksolutions.com**, **www.register.com** or **www.alldomains.com** and pick up an address. You can expect to pay anything up to £50 for a domain name, unless it's a *really* good name that someone has already registered and is auctioning off, in which case you can pay anything up to $10,000,000 (would I lie to you? fortunes have changed hands just for the rights to use a domain name).

Being a bit of a cheapskate however I aim to pay as little as possible. For **.com**, **.net** and **.org** addresses I go to **www.joker.com** where, depending on the exchange rate, I can get an address for about eight quid; for **.uk** addresses I ask a friend who can get them for me for as little as seven pounds, although this is because his company pays around £1,000 a year for the privilege of being able to register domains at this price.

However, once you have the name, this is where the real money starts to come into play. You now have to have some way of letting the rest of the Internet know how to find the machine you've given that name to, which means setting up the DNS records. DNS (domain name system/server) is what tells the Internet which domain names are mapped to which IP addresses.

If you're not a Unix guru who can set up and run your own domain server (or, like me, have permission to use someone else's), you're either going to have to get your ISP to host it for you – which requires the time and effort of their system administrator, which is not cheap – or the domain registry might offer to host it for you – which also comes at a price.

Either you pay in money, or some registrars make you host all your DNS records, Web sites and e-mail on their service where they can force you to carry advertising on your Web site or bombard you with spam e-mails (some have been known to make you pay both ways).

Generally it's much less hassle to get your ISP to do the whole thing of registering the domain name for you and setting it up right from the start.

So when you're asking your ISP to register your domain – or you've ventured onto a Web site that offers domain registration of your own accord – what do you ask for? It's generally accepted that if you want a nice, short, snappy address ... it's already taken.

Take almost any single dictionary word – and quite a few words that you won't find in any dictionary – add a **.com** on the end of it, and chances are someone's got there before you and registered it. You could try for a **.net**, or something more in line with the country you're in – **.co.uk** perhaps – but it just doesn't have the same cachet as that **.com** address.

The **.com** address is now so important, it's a byword for an Internet company, and we're starting to see companies pop up with names that are skewed or just plain weird because they couldn't get anything else in a one-word **.com** that hadn't already been registered. My advice to you is this – forget single word addresses.

You can get some great two- or three-word addresses which are just as short, and much more relevant, than some of the convoluted single word domains that people are using today. It's less than a year since I registered **iconbar.com**, and I also have the slightly lengthier domain of **houseofmabel.com** for when I'm designing graphics under the company name of House of Mabel Design.

I also don't mind the **.net** TLD, as it's still pretty international and fits

well with some of the non-profit projects I'm working on. For instance, on a lengthy car ride recently a few friends and I mulled over the possibility of a spoof/game Web site where visitors could design their own religion and see how many people would vote for them (and so would be the most powerful "god"), which in a Toys'R'Us style could be called "Religions Is We" (as anything "R'Us" is owned by Toys'R'Us and they have the lawyers to prove it). Low and behold, **iswe.net** was free for use, despite being only four letters in length. A little lateral thinking goes a long way.

However, maximum cool points go to the guys who registered a site I found when researching this article, who took advantage of the Tongan islands opening up the **.to** coTLD to the rest of the world to make a little money; registering seemingly useless domain of **yp.to**, they then added a subdomain of **cr** to the start to make what must be the coolest Web addresses any cryptographic Web site can have (**http://cr.yp.to/** in case you haven't worked it out). There are very few countries that will allow you to register two letter domains (there's usually a minimum of three letters, although that didn't stop companies like BT getting **bt.com**), but it just goes to show how a little thought can get you a stand-out address.

Caveat Emptor

All of which leads to staying on the right side of the rules, especially the law. The law in this case is a little shaky – there are problems with jurisdiction when the two parties involved are from different countries, and even cases in the same country seem to throw up different results – but in general if a big company says they have the right to use a domain name you own, you're not going to want to argue the case in a court of law.

Keep away from anything that will put you on a collision cause with a bigger company, even if it seems like a good idea for attracting more visitors.

On the flip side however, there may be someone out there who's going to register a name you want in order to extort money out of you so that you can get the name back.

Called cybersquatters, it's often cheaper to give in and pay up rather than go through a lengthy and costly court case (even if you win, you might have lost several weeks or months of valuable time), and in one of the most recent cases the Scottish football association was forced to give £5,000 to charity to get control of **hampdenpark.com**, the name of Scotland's international football ground.

There is one sure way to beat them though – get there first. Even if you don't have the money or ability to set things up fully, you can at least buy the name so that it's there for later. Once you've registered a name, no-one else can use it until you give it up.

As a final way of getting a cool address, you can get a subdomain of someone else's cool domain. Many ISPs offer some form of subdomain service as standard – for instance, *stdevel.demon.co.uk* or **spisolation.freeserve.co.uk** – which is slightly snappier than the usual **www.argonet.co.uk/users/bladerunner/**. But if you get friendly with someone that runs a large domain, they might be able to offer you something similar to their address.

Take for example **ukfortress.com** – a domain set up for players of the game *Team Fortress*, a multi-player add-on for *Half-Life*. Designed by a member of the TA clan, the subdomain of **ta.ukfortress.com** was set up to host that clan's details, with member details, games stats and a message board.

So impressed were the other clans that pretty soon other subdomains such as **ak47.ukfortress.com** followed, using shared resources so that everyone could benefit from a central resource for UK Team Fortress fans.

An example closer to home is the RISC OS resource site **iconbar.com** which, at the risk of blowing my own trumpet, hosts subdomains such as **fonts.iconbar.com**, **ftpc.iconbar.com** and **compo.iconbar.com**. If you can't get a full blown subdomain hosting, you can at least buy cooler names such as those available from **come.to** – you can get a **come.to/<something>** address which you can point at your existing Web site hiding it's drab address, and it has the benefit of being changeable if you move to a different ISP.

So, as you can see, as the world is starting to rely more and more on the Internet, so the rush to get a cool sounding address tests the limits of the domain name system. Perhaps it's time you went out and got your digital address registered while there's still time? END

Money from

Rob Donaldson checks out the Web sites where you can win ££££s

There have been a lot of changes in how we access the Internet over the last couple of years. Free ISP providers and cheap to completely free telephone connection charges mean that, with a little thought, it really shouldn't cost you very much – if anything – to be on-line for long periods of time. Yet rumour still has it that despite this or, more likely, because of it, no commercial Internet company (except the ones no one will admit to visiting) has ever made a profit.

That shouldn't prevent you from doing so though. There are quite literally thousands of Web sites on the Internet which are giving away money, holidays and other desirable items as prizes in competitions. OK so you're not guaranteed to win every time but the fact that so much browsing time is free nowadays, the odds really must be in your favour, and it can be a lot of fun too.

In fact the only problem you might have is if your Web browser can't do Java, Javascript or the latest Flash (or you have them turned off) because most of these sites have to use them for all their effects.

Just about every company, magazine, television channel, educational facility or whatever has it's own Web site and many of these run one-off competitions at some time or another, with magnificent prizes such as Caribbean holidays, computers, DVD players and surround sound speaker systems.

Others run monthly, weekly, daily and even hourly competitions with prizes ranging from bottles of wine, DVDs, videos and books up to £1,000,000 in cash. The problem is knowing who is running such competitions, when and for how long. Fortunately there is a Web site which you can go to which will tell you what sites you need to visit in order to find the competitions.

All you need to do is point your browser at **www.loquax.co.uk** and you won't have to miss out on the chance to win any of the hundreds of free-to-enter competitions open to everyone in the UK. Loquax is updated daily with all the latest competitions. They also categorise all the competitions by the types of prizes available or by the frequency of the competitions. So if you are only interested in trying to win holidays, there's a page of links specifically for you. Similarly, for the professional competition entry buffs, there are pages and pages to search through.



The Loquax site will tell you where to go to win



Tombola has some interesting games to play

Fun, quiz & trivia sites

I'll mainly be concentrating on these sites in this issue. These are the sites where you can find fun games to play, on-line scratch cards, crosswords and quizzes on all kinds of trivia. Some lucky or clever participants end up with rewards of cash and goods for the best scores of the week or month. There are even some instant-win prizes. If we put our minds to it, those winners could be you or me.

The first site I came across was Tombola (**www.tombola.com**) which has an ever-increasing number of games available on it. *I:Scratch*, *Fetch* and *The Secret Agent Game* are all fairly simple scratch card simulations each of which has a range of cash prizes dependent on which symbols or lines are uncovered. *Passport* is similar but has one prize of £500 if you can uncover the five destinations listed in your on-screen passport. You can keep going back and playing these games on a daily basis.

Syndicates is different in that it simply gives you one free lucky dip entry per day into the National

the Internet?


Carlton get in on the act with the Jamba site

Lottery on the following Saturday. However only a limited number of tickets are available so what you end up being is a member of a syndicate with a part share in the ticket. If the ticket wins the Jackpot, the five plus bonus ball or the five ball prizes the winnings are shared equally to the members of the syndicate. If only the four ball or three ball prizes are won, Tombola selects one member of the syndicate to win the prize.

With a little more searching I found GetMinted at **www.getminted.com** claiming to be the only Web site dedicated to giving you cash. It looked promising at first with its weekly £1,000,000 free lottery game, but I soon discovered that the site was still a beta test. Also I saw that no other cash prizes would be given away until the completion of testing and, once it was complete, all other games would cost you money to enter. So instead, I quickly turned my attention to Jamba (**www.jamba.co.uk**).

Jamba is a combination site. It has plenty of trivia games and quizzes, but it also has on-line casino pages as well. Last week there was a choice of seven different trivia quizzes to take part in with a £10,000 cash prize and a hot air balloon ride to be won. Then there was *Take a Letter 2*, a word game with four rounds to it. The highest scorer of the week stood to win a digital camera. Not forgetting *Carry On Bingo* with Kenneth Williams calling the numbers, £10 for a line and £100 for a house – there's immortality for you.

There are a couple of other games to play, *Spellbound* and *That's A Wrap*, neither of which I've had chance to play yet but they do seem to have decent prizes for the weekly winners. Last week *That's A Wrap* had a prize of a Toshiba telly.

Trivia365, as its name implies, is quite simply the largest collection of trivia quizzes available on the net. It can be found at **www.trivia365.com** and there is a fair selection of prizes to be won. The quizzes have multiple choice answers and the quicker the correct answer is given the more points the player gets. The player has ten questions to accumulate a high score with the maximum score being 10,000.

Be warned, this site can be very addictive. If you aren't happy with your score after one game you can play again, and again, and again! I tried the *Buffy The Vampire Slayer* quiz and didn't do half as well as I expected. For a question about the number of graveyards in Sunnydale I hazarded a complete guess at fourteen and apparently there are twelve – but I managed to get on the high score table of the *Sci-fi/Fantasy Movies* Trivia Quiz.

Last but not least is the Uproar site at **www.uproar.co.uk** which is jam packed full of quick trivia quizzes which on successful completion give you a number of entries into a draw for modest prizes. The prizes may be small but the draws take place every hour. Uproar has a Full House Bingo game taking place every quarter of an hour or so.

The cash prize money for each game is dependent upon the number of participants take part. More players more money. Uproar soon became my favourite site when I discovered the *Catchphrase* game. I love it. You get the excitement of playing against the clock and up to three other players and once again you win chances of winning in the upcoming prize draw.

Gambling sites

These are the on-line casinos which allow you to experience the thrill and fun of gambling without the risk of having the 'boys' sent round to see you if you make a huge loss. There are many sites which allow you to win cash without the risk of actually losing money. Some pay in points that you can accumulate and then convert into goods or cash as prizes.

I will spend the next month playing at these gambling sites and will let you where the good and bad sites can be found. I'll also update you on how successful I've been with the sites I have mentioned above. And I won't be sharing my winnings with the editor. END


So, how good is your trivia knowledge?

Rise and fall

David Dade explains the history and future of the modem

With Internet access via Satellite, Cable, *Home Highway* and Digital Subscriber Line flooding onto the market, is there any future for that squeaking old analogue box we call a MODEM? What were they anyway, and why did use them?

When Samuel Finley Breese Morse sent the first Morse Code telegraph message from Baltimore, Maryland to Washington, DC on May 24th 1844, the text was "What hath God wrought". What Morse had wrought was a telegraphy code that was quite easy for humans to read, but very tricky for machines to decipher.

Machines could easily translate the dots and dashes into marks on paper, but the problem was the variable length of each character's code. Letter E is one dot long while letter O is three dashes; over 10 times the duration. Computers capable of timing the pulses and making programmed decisions were a hundred years in the future. But Morse code would continue be used for human-to-human communication for the next 150 years.

In 1874 in France, Jean-Maurice-Émile Baudot patented the printing telegraph or "teleprinter". Now each character of his Baudot code was represented by five time slots or bits, giving 32 different codes, with more characters and numbers provided by sending 'letters' and 'figures' shift-lock codes, with each character surrounded by a start and stop period for machinery



Hi Di Hi shine, Low di Low speed

synchronisation. A teleprinter was a mechanical marvel that relied on a speed governor, inertia and luck.

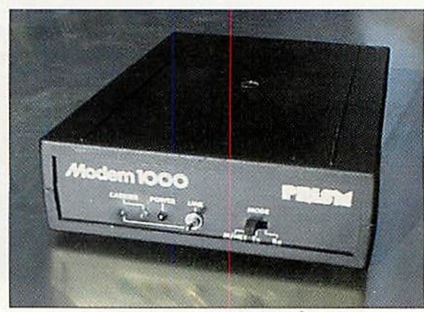
One hundred and fifty years later modems (MOdulator-DEModulator) still use a similar data format, but the transmission rate of characters is no longer limited by the physical mechanisms of a teleprinter. We still remember M. Baudot by the name given to data transmission speeds: *Baud rate*; the measure of the number of data time-slots per second. Bits per second is a more descriptive measure, while characters per second requires inclusion of all the surrounding timing bits.

Our telephone network was designed for speech communication, so for data transmission the data is converted to use the speech frequencies of the audio spectrum. The modem MODulates audio tones with the data to be transmitted and DEModulates them to retrieve incoming data.

Maplin and Micronet

In the heady 1980's when the BBC Micro was at the cutting edge of home computer technology, my first encounter with a modem came when Essex electronic components retailer *Maplin* opened an online ordering system. One of their construction projects was a 300 baud modem kit, and so I built one – 300 baud is about six times faster than the bobbing print head of the old Saturday afternoon TV footie results teleprinter.

The BBC Model B's serial port could easily cope with 300 baud, and although the Maplin modem had no flow control, it wasn't a problem. Just like Jean Baudot's teleprinter, the data flowed out of the modem into the computer at about the same speed as the computer was told to process it. Imagine a chocolate



Remember the Gnome and ViewFax 258?

factory production line with an endless line of *Viennese Whorls* arriving sedately on a conveyor belt. There's plenty of time to pick each one up and place it in a box, and put the box in a stack. No flow control needed, but there is a red button to stop the belt at lunchtime.

The *Maplin* ordering system introduced me to Bulletin Boards; computers you could dial into and leave messages on for others to read and reply to.

I discovered *Micronet*, which was a dial-up Bulletin Board run on British Telecom's *Prestel* Viewdata system (and would now be described as a Portal) with online features like e-mail, games and competitions and a local rate dial-in number. *Micronet* used a higher speed of 1200 baud, and so I bought a PRISM 1000 Micronet modem.

The PRISM couldn't dial so a telephone was needed to dial-in, and you flicked the little "Line" switch at what you hoped was the right moment, and hung up the phone. With *Micronet*, the Viewdata was coming in quite a bit faster, and going out slower than before, so the PRISM had to have flow control connections in the BBC Micro's silly "domino" plug that you could easily push in the wrong way up.

So, the factory boss has now speeded up the conveyor belt and you haven't quite got time to box the



Well it was magic at the time...

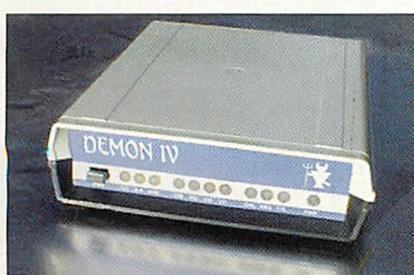
chocs before the next one's in front of you. You have to hit the red button to stop the belt until you're ready, then hit the green button to start it again for the next choc in line. That's flow control, and fast modems do it all the time.

I had started to dabble with Basic and Assembler programming on the BBC Micro, and produced my own Viewdata Bulletin Board program called *DaveTel* which had all the same features as the commercial program CommuniTel, but mine could get ten more pages on each floppy. What I needed now was an auto-answer facility, so I bought a 1200/1200 bps *Magic modem*.

All present and correct

As data transmission rate is increased, so does the possibility of errors in reception due to crackles or line interference. There's no way to tell if a character has been received correctly or not. But if a checksum error-correction protocol is applied to blocks of data while they're being sent, all is not lost. The error-correcting modem at the other end calculates the checksum, and asks for re-transmission of the block if it doesn't match.

To get an effective increase in data rate without actually using more bandwidth – and there's precious little in a telephone speech circuit – the modem pre-compresses the data before sending, and the other end expands it again. How much compression can be gained depends greatly on the data itself and the skill of the compression algorithm designer. Microcom had just developed a protocol called MNP5 which featured error correction and up to 2:1 compression.



OK, so it did have a red label...

Prestel announced it was doubling the connect speed to 2400 bps send and receive. I just had to have a new 2400 bps modem featuring flow control, auto dial, auto answer, error-correction and compression, so at the next Acorn show I bought a *Demon IV* 2400/2400 MNP5 modem.

After that, all hell broke loose modem-wise, with the appearance of Alan Glover's *Archive BBS*, its rise and subsequent demise and re-emergence as *Arcade BBS*, under the stewardship of David Coleman and myself. From *Archive*, *Arcade BBS* inherited three *Miracom* WS3000 2400bps MNP5 modems.

Arcade BBS began to make a name for itself as the definitive Acorn resource online and it wasn't long before we were urged to upgrade the modems. First a 9600bps *Miracom Courier* was purchased through *Hawkastle's* half price "Sysop Scheme", then two more 14,400bps *Couriers* followed. As the ever-rising-speed V.number standards ratified by the International Telecommunications Union in Geneva flowed out, including the V42bis 4:1 compression standard, we got all the modem upgrades from the now renamed *US Robotics.*

Peaks and troughs

At the peak, *US Robotics* had 'lent' *Arcade BBS* two small-footprint V.Everything modems, and we'd bought three more through the "Sysop Scheme", and all five were upgraded to 33,600bps capability. To cram such a data rate into an audio bandwidth of 3KHz is a miracle of modern mathematical transformation, let alone getting it to work in both directions at once. But that's not the end of it. The ITU were developing an even faster standard called V.90, using which *US Robotics* claim their Couriers could reach a maximum of 57,333bps downstream on a good digitally-originated line, while still reaching 31,200bps in the upstream direction. This wouldn't have speeded-up *Arcade BBS* as our lines aren't digital, and for users downloading files from the BBS the data rate is the slower upstream 31,200bps speed.


Arcade's Couriers. Sob! There were five, now there are only three

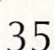
The Internet has drawn many users away from dialling *Arcade BBS*, but we've countered with a *Home Highway* connection at 64,000bps at weekends. Demon Internet's *Surftime* should be launched in September, and then BBS will be online to the Internet every evening and all weekend. We hope this will rejuvenate our own and our users BBS activities.

The end?

But will you still be using a modem this time next year? The ITU have just ratified a new modem standard called V.92 that promises to increase upstream speeds by 40 per cent from 31,200bps to about 44,000bps. It also allows for an 'on hold' facility to keep the line open during voice calls. Additionally, a new data compression standard called V.44 based on the LZJH algorithm that's 25 per cent better than the current V.42bis standard, offers a 6:1 compression ratio on a Web browsing connection.

It looks like the last chance for the modem. While British Telecom holds back reasonable charges for ADSL and keeps ISPs waiting for competitive unmetered access, the squeeze is on. Can you hear the modems squealing?

END



Linux News ● Linux News ● Linux News ● Linux News ● Linux News



Linux News

● Linux News ● WordPerfect Office 2000

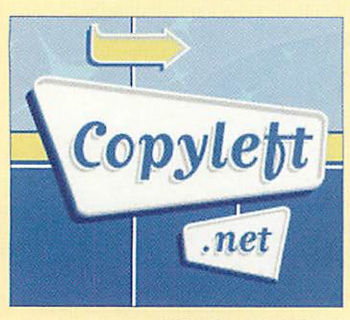


Wear the T-shirt

The DVD Copy Control Association (DVD CCA) don't like people to know how to copy DVDs, on the other hand the Copyleft organisation don't see why you shouldn't – and perhaps at this point we should say that we don't approve of copyright theft, but knowing *how* to do something doesn't automatically make you a criminal.

Unfortunately this disparity of viewpoint has led to a rather excited legal battle in the USA.

The DVD CCA has taken a number of DVD de-scrambler distributors to court (for distributing DVD de-scramblers, surprisingly) and has just extended the named naughty people to include Copyleft.



Why? Because Copyleft have been selling an "OpenDVD" T-shirt which gives away source code which will de-scramble a DVD. Naughty but:

"Coding is NOT a crime," Copyleft's online catalog says, "so express your disapproval of the DVD CCA and support OpenDVD advocacy."

Steve Blood, the founder of Copyleft, said that his company received a summons on Monday, and that he has not decided how to respond to the action. "It's hard to know what to do when you're just a tiny company in New Jersey," Blood said.

A January injunction bans "posting or otherwise disclosing or distributing, on their websites or elsewhere, the DeCSS program, the master keys or algorithms of the Content Scrambling system ('CSS'), or any other information derived from this proprietary information."

Meanwhile, Copyleft has sold more than 4,000 OpenDVD T-shirts designed by Copyleft programmer Dom Bellizzi. The company has donated more than $12,000 of the proceeds to the defence fund, and Blood says that a second round of donations will be underway soon.

Polarisation of the free versus secret camps seems to be increasing and this is just another example of it. On the one hand are people saying "hey wow, you can make stuff and distribute it free, or sell it but give away your secrets anyway and still make money" and on the other are the commercial organisations saying "It may be cool, but it's mine and you can't have it, but you can buy this thing that's based on it".

With DVD the argument started with regionalisation – a non-sensical attempt to restrict and control DVD distribution – which failed because all sensible DVD player manufacturers put in the necessary software to allow you to change which region the player pretends to belong to.

And now there's this. Another waste of energy and resources. When will they ever learn?



The offending t-shirt? Maybe the code's on the back...

Eye of the stormix

Stormix Technologies Inc., has announced the launch of Storm Linux 2000 Starter Edition which provides Windows users who want to try Linux with a low cost, full featured, easy-to-install distribution. Available now, this product is intended for people who want to easily access the power of Linux without an abundance of third party software.

David Talmor, President & CEO of Stormix Technologies Inc., said, "There are people who want to join the Linux revolution but have no idea where to start. This is a great introduction to Linux for them. We offer a free download version at our Web site (**www.stormix.com**), but most people prefer the convenience of having a distribution complete with the CD-ROM, installation guide, and support for only US$19.95."

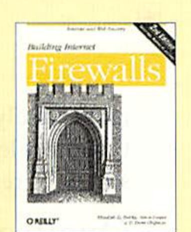
The *Storm Linux 2000 Starter Edition* is the first member of the Storm Linux 2000 family based on the highly regarded Debian/GNU Linux 2.2 "Potato" release. Bundled in the Starter Edition are the essentials to get users up and running in Linux: *PartitionMagic*, *Linux Prep Tool*® by Powerquest®, Netscape® *Communicator 4.73* and the Sun® *StarOffice*™ *5.2* productivity suite.



Fire extinguisher

Completely revised and expanded, this second edition of the highly respected and bestselling *Building Internet Firewalls* now covers Unix, Linux, and Windows NT. It's a practical and detailed guide that provides step-by-step explanations of how to design and install firewalls, and configure Internet services to work with a firewall.

It covers a wide range of services and protocols. It also contains a complete list of resources, including the location of many publicly available firewalls construction tools.



Title: Building Internet Firewalls, Second Edition (894 pages)
Authors: Elizabeth D. Zwicky, Simon Cooper, & D. Brent Chapman
ISBN: 1-56592-871-7

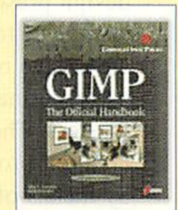
Get GIMPed

GIMP: The Official Handbook covers almost everything about this powerful and free graphics editor. Users of all levels can learn how to use and become productive with the tools, filters, scripts, and effects – it starts with how to compile GIMP for your system.

Full sections on GIMP's basic usage, navigation, tools, and scripting language, Script-fu, as well as how to compile plug-ins, use different filter types (render, distort, colour, artistic, and so on) and create animation using AnimFrames are just a few of the 47 chapters that make this book worthwhile.

Six appendices cover many technical aspects: GIMP start flags and initialization files, GIMP manual pages, Perl-Fu scripting, installing scanners, and more. A 32-page colour section includes screenshots and examples of what GIMP can do, plus how many filters work.

With its powerful scripting, plug-ins and free distribution, GIMP is a powerful asset to any digital artist. GIMP can show you how to make the most of this amazing graphics application.

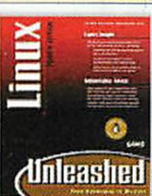


Title: GIMP: The Official Handbook (895 pages)
Authors: Karin Kylander, Olaf Kylander
ISBN: 576105202

Off the leash

Linux Unleashed, Fourth Edition, is for the operating systems professional new to Linux or with a little Unix/Linux knowledge. The book concentrates on the needs of administrators, power users, and programmers – covering everything from looking after users and groups to using Linux programming tools.

This manual shows you how the operating system works from the inside out and goes into considerable detail about the programming tools and utilities to help the administrator and programmer work better.



Title: Linux Unleashed (1468 pages)
Author: David Pitts, William Ball
ISBN: 0672316889

Paul Webb uses his Linux box for work

The office

It had to happen. With the release of *WordPerfect Office 2000* for Linux, the once-rebellious OS seems to be moving into the mainstream. In a concerted attempt to lure MS Office users over to Linux, Corel have produced a range of tools which will do much to convince the broad mass of computer users that Linux is something more than a hacker's OS.

So what do you get? Well, in addition to *WordPerfect 9*, users can also use the *Quattro Pro 9* spreadsheet, *Corel Presentations* and the *CorelCENTRAL Personal Information Manager* (PIM). The *Paradox 9* relational database is also available for owners of the Deluxe Edition.

If you think that this suite may be for you, then don't worry about installation because it's a breeze. A dedicated setup program is available during which the user can either log in as 'root' or 'su' to root. Installation is then simply a matter of 'mounting' the CD and moving into the CD's root directory before typing ./setup at the shell prompt. If all goes well, you will then be able to activate any of the constituent apps from the shell prompt or from KDE's K menu.

WordPerfect

On first glance, *WordPerfect* is very much like any other modern word processor which means that seasoned users of *Ovation Pro* and *EasiWriter* will meet with few surprises. Such a cursory view would however be to sell the application short because it is able to open and edit documents created with MS Office and Lotus SmartSuite. Indeed, this facility is very important if the intention is to attract Windows users who do not wish to forego WYSIWYG applications for unfamiliar UNIX tools.

Established users of *WordPerfect* should also note that the latest version includes a range of interesting new features like real time previewing, autoscrolling and the provision of writing tools for multiple languages. Moreover, *WordPerfect* also offers an 'outline' facility which means that the user can review the structure of a document by examining a hierarchical list of headings and sections. Interestingly, this feature will perhaps attract experienced UNIX users who might consider using *WordPerfect* for smaller documents while retaining *TeX/LaTeX* for more substantial projects.

So what's the verdict? *WordPerfect* will undoubtedly meet the needs of users who simply want to write a letter or an essay but specialist users will still have recourse to more traditional UNIX fare.

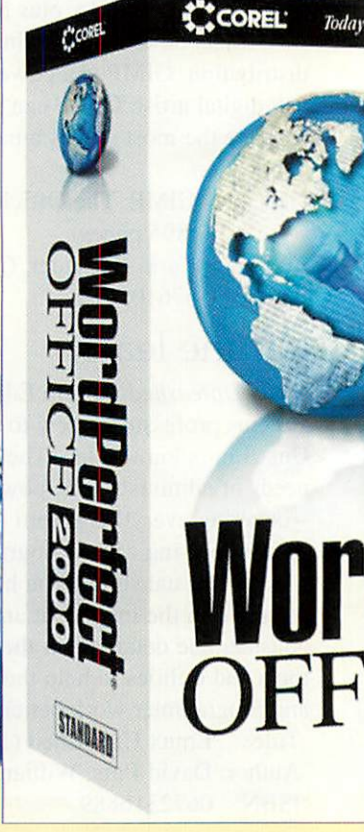
Quattro Pro 9

Much the same could be said about the suite's spreadsheet – *Quattro Pro*. It offers nothing novel to practised spreadsheet users but does however have the interesting ability to 'mimic' the MS Excel environment – another plus point in Corel's drive to attract Windows users. Moreover, *Quattro Pro* allows the user to import/export Excel and Lotus 1-2-3 files. Finally, *Quattro Pro* should also be accessible to inexperienced users who require the facilities which a spreadsheet can offer. I particularly appreciated *Quattro Pro*'s ability to automatically determine whether a datum was a value or a label.

Corel Presentations

Presentations allows the user to create slide shows and drawings which can include text, charts and graphic objects. The app offers the ability to design presentations from scratch or to take advantage of a collection of predefined slide show masters. The slide show creation process is done by means of 'slide







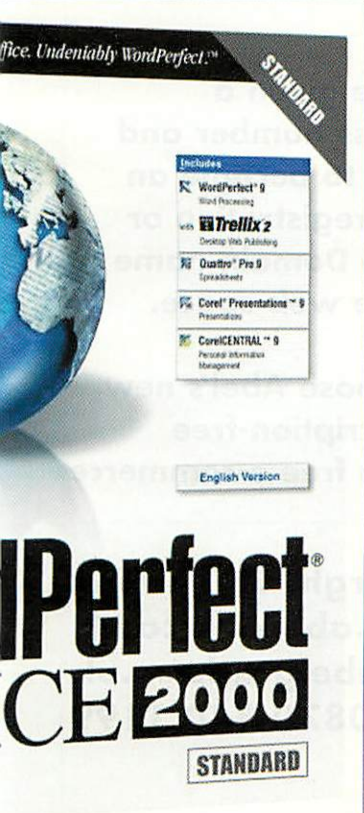
penguin

layering' whereby *Presentations* takes advantage of different layers for text/graphical objects, predefined objects like titles and background details like colouring.

Slides can then be created, viewed and edited from the 'Slide Editor'. *Presentations* also provides drawing facilities and a range of rudimentary image processing tools. This package is brilliant! *Presentations* is very easy to use and fills a niche in the GNU/Linux market.

Paradox 9

Paradox – the suite's relational database – is a very powerful application which will probably remain a mystery to the bulk of users through no fault of its own. Although it offers a range of features in common with apps of this type, it is hard to see what niche it is designed to fill. The home user will probably be more inclined to use a more accessible database like *Gaby* while business will opt for the industrial strength *MySQL*.



That said, *Paradox* is able to offer compatibility with its MS equivalents because reports can be saved in RTF or Doc formats while tables can be stored as JPEG images. Moreover, determined users will be able to generate usable reports via the 'Expert' help facility while customisation will also be possible where one wishes to make use of *Paradox*'s object-based development language *ObjectPAL*.

Although *WordPerfect Office 2000* is very easy to use, any user will occasionally have need of instructional material which is fortunately available in abundance. The CD comes for example with a comprehensive users' manual in PDF format. Moreover, Corel offer an on-line 'knowledge base' (**search.corel.com/kbsearch/**) from which users can download documents on a variety of subjects while e-mail support is also available from Corel Technical Services.

CorelCENTRAL

CorelCENTRAL includes a Calendar, a simple Memoing system and an Address Book. Although very rudimentary in comparison with something like MS Outlook, I feel that this is a strength. Memos can for example be organised on the basis of projects while the Calendar makes provision for multiple calendars – useful in distinguishing between work and home-related activities.

The calendar also allows the user to make a distinction between tasks and sub-tasks where a sub-task is an activity which has to be performed before a larger task can be completed. The task/sub-task dichotomy is, as far as I'm aware, unique to this suite and should prove invaluable.

Conclusion

WordPerfect Office 2000 is, without doubt, a welcome development. Although not a particularly innovative piece of software, it will prove to be invaluable for people who have neither the time nor the inclination to learn about the range of powerful but counter-intuitive UNIX tools. Whether it will however fill a niche in the Linux market in the face of competition from *StarOffice* and *Applixware* still remains to be seen.

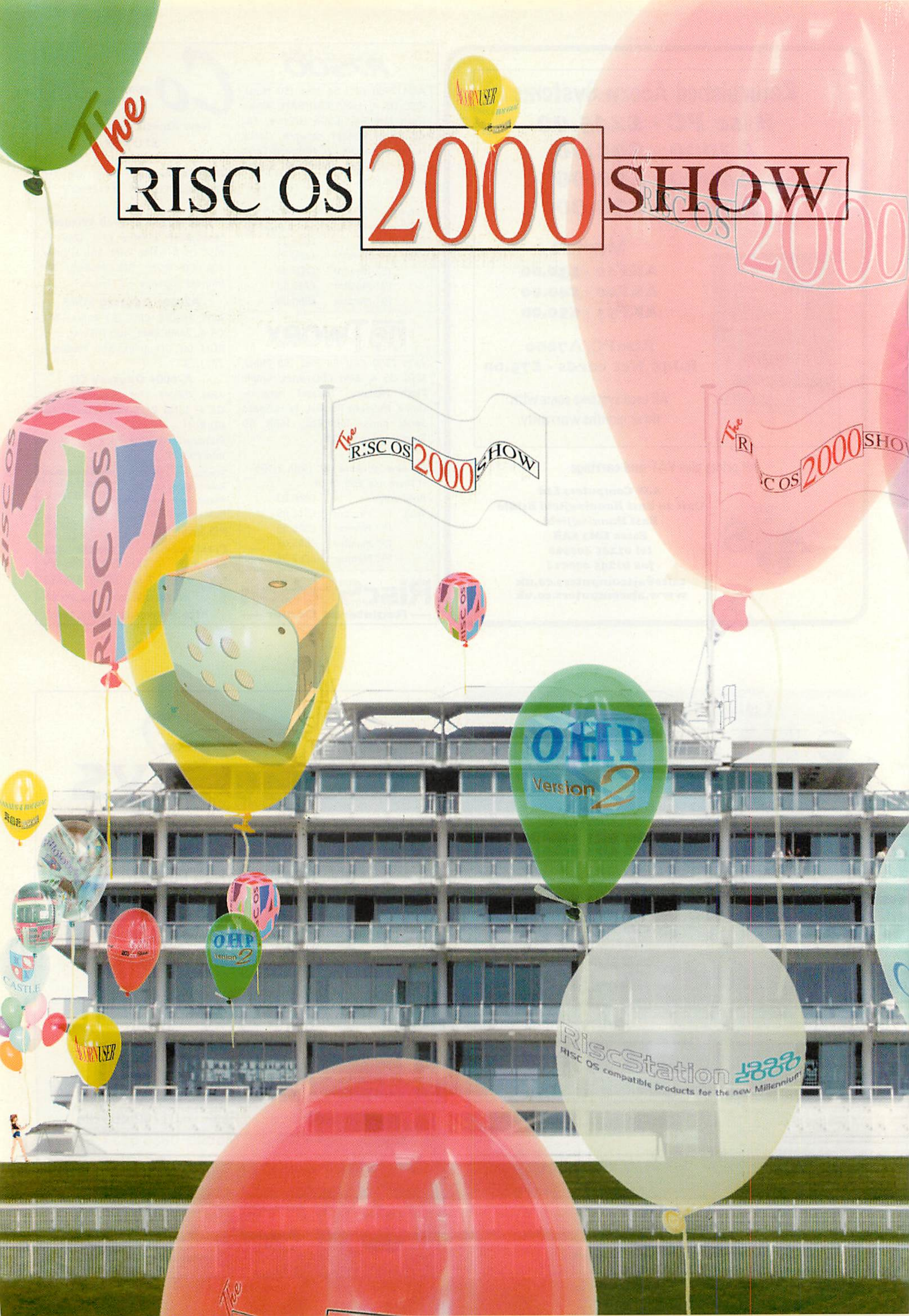
Product details

Product:	WordPerfect Office 2000 for Linux
Price:	£130 ex VAT

Minimum requirements

Linux kernel 2.2.x
glibc libraries 2.0, 2.1 or compatible
Redhat rpm Package Manager
or Debian dkg/apt-get
Pentium 166MHz, 32MB RAM (minimum)
200MHz, 64MB RAM (recommended)
CD-ROM – VGA monitor – Mouse or tablet
450MB HD space needed for a full install





The RISC OS 2000 SHOW
OHP Version 2
RiscStation 1999 2000
RISC OS compatible products for the new Millennium


organised by...
The ARM Club
with...
ROUGOL
RISC OS User Group of London
AAUG
SASAUG
Surrey and Sussex Acorn User Group
sponsored by...
ACORNUSER
spacetech
imaging technology
SASAUG & ROUGOL
ACORNUSER
OHP
Sat 21st October 10.00 to 17.00
Sun 22nd October 10.00 to 16.00
Queen's Stand, Epsom Downs Racecourse Surrey
(Close to M25, Nearest BR: Tattenham Corner)
Shuttle bus to/from Epsom Station
Entrance £4 Advance, £5 at the Door
Ticket valid for both days
ARM Club, SASAUG and ROUGOL members free on Sunday
Send Cheque payable to The ARM Club at:
RISCOS 2000
Merton Court
38 Knoll Road
Sidcup
DA14 4QU
Tel 07050 679262 Fax 07050 679263
More information at: www.armclub.org.uk/shows/riscos/
advert by PHOTODESK

Art in a new

Aaron Timbrell shows you how to get the most from this expansion software

DrawWorks is a suite of graphics applications from iSV Products, and is available in a number of versions. The basic copy (*DrawWorksSE*) was supplied on an *Acorn User* cover disk and on a CD as well. The standard version is *DrawWorks Millennium* (DWM) and is supplied on a CD with fonts, clip art and many other resources.

The latest version launched at Wakefield 2000 is called *DrawWorks New Millennium* (DWNM) and offers even more features, and was reviewed in the August 2000 issue of *Acorn User*.

Any version of *DrawWorks* is a very powerful package that can produce amazing effects, but only if you know how to use it. The key is to experiment and see what happens. This article will give you some tricks that can be used to produce clever effects simply and quickly. All these tricks and effects are designed for use with the latest version (DWNM) although they may well work on earlier versions.

Around we go

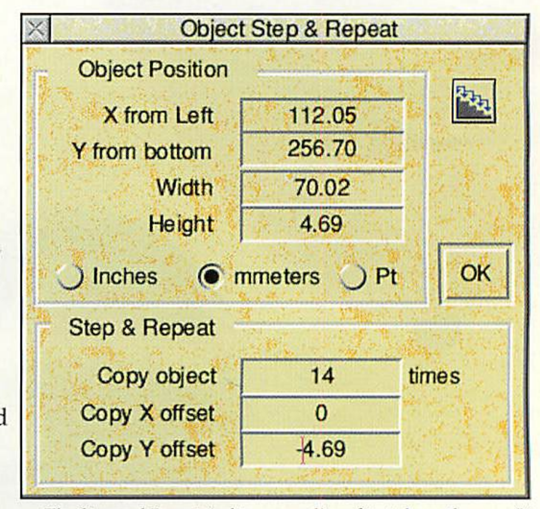
Manipulating text is one area the package excels as can be seen from the logo. This includes a number of effects including wrapping text around a sphere, bending text in a circle as well as two different types of shading.

So how was it done? The basic shading principle involves the use of the DrawWorks "Merge paths" tool to produce stencils which can be applied over graded objects to produce complex shading. Both the 3D text in the centre and the shaded text around the edge was produced in this way.

The design is actually quite easy to construct and we will start with the sphere in the center. Firstly the line of text was typed in the *Draw* window. A number of copies of this were then produced using the step and repeat tool (opposite).

This results in a block of text which can then be selected and then manipulated using the *DrawTrix* tool. To convert the text to a sphere the option 3D.Sphere can be chosen from the Effects menu. Clicking on the Transform button converts the original block of text into a sphere shape. This new object can then be dragged from *DrawTrix* back into the original *Draw* window.

Having produced the sphere it now needs to be turned into a stencil. Drawing a circle around the sphere; selecting both circle and

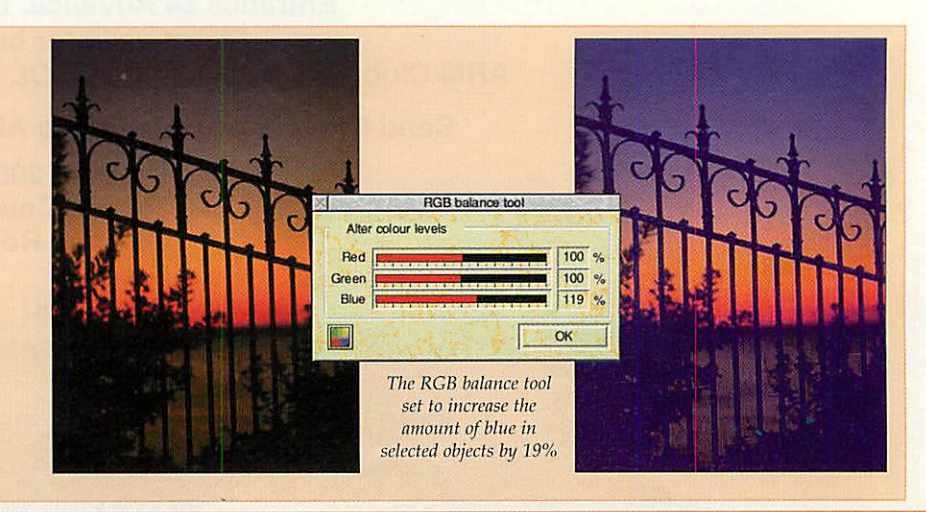


The Step and Repeat tool to copy a line of text down the page (Y offset =-4.89) 14 times, making a block of 15 lines of text in total

Colour balance

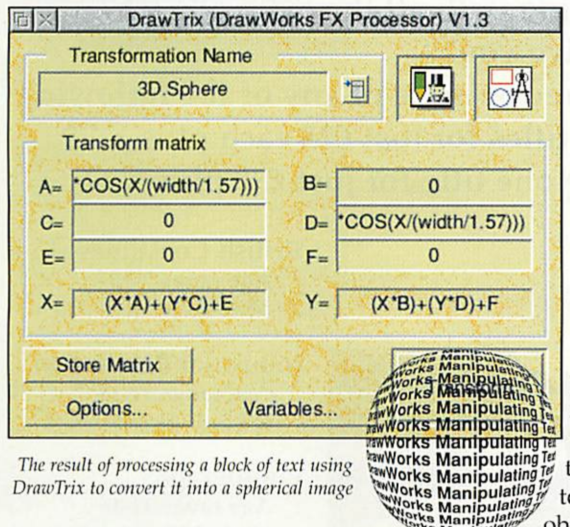
DrawWorks can alter the colour of both vector and bitmap objects in a great many ways. For example the RGB Balance Tool can increase or decrease the red, green or blue parts of an image.

Suppose we wanted to alter this photograph so that the sky was blue. This can easily be done using on of the two Colour balance tools. As you cyan see the result of adding extra blue to the image alters the colour of the sky.



The RGB balance tool set to increase the amount of blue in selected objects by 19%

millennium



The result of processing a block of text using DrawTrix to convert it into a spherical image

sphere; then clicking on the "Merge Paths" tool results in this.

It may look like white text on a black background, but it is not – the white text is actually transparent. So a shaded object can be placed behind and the white parts will then become shaded.

To produce the required shaded object a large black circ is drawn, then a sm white one. Both are selected and have their line colours set to none. Then they are graded using at least 64 steps.

Placing the graded object behinc the sphere with the text results in a black object with grey shaded text. However in the original design only the text shows. This is easy to achieve. Simply select the object containing the text (it's currently black) and change its fill colour to white. You can see the result of doing this in the illustration below. Altering the colours of the shading will then alter the colour of the text.

The same objects, but processed using the "Copper" setting from DWNM's Metaliser tool

Having produced the shaded text for the center of the design we can now make the text that goes around the outside. This is produced using the path curving tool. Having produced two sections of text, one for the bottom and one for the top two circles are then drawn around the text objects and the entire set of objects are

DrawWorks Millennium Curve Moulder
Curve Settings
Size of curve 10 cm in
Start angle -90
End angle 90
Quick and dirty
Standard accuracy
High accuracy
Very high Accuracy
Curve selected obj

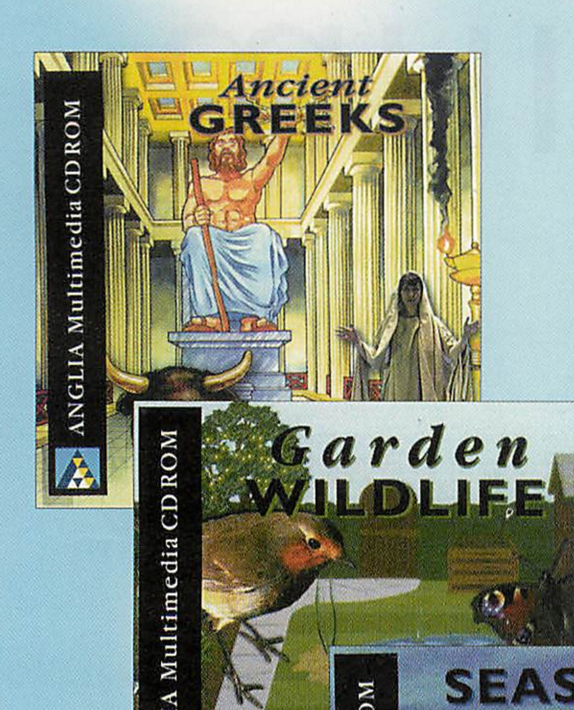
The Path Curver set up to bend the text around the top 180 degrees of a circle. Setting the angles to 90 and 270 will bend text around the bottom 180



The shaded objects (Black on left, White on right)

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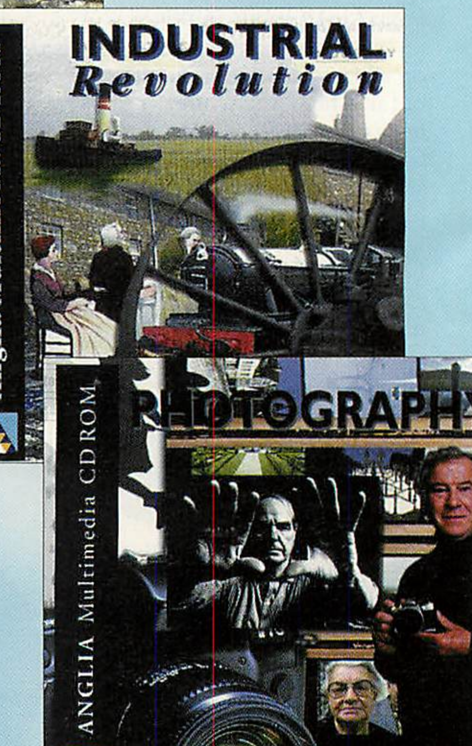
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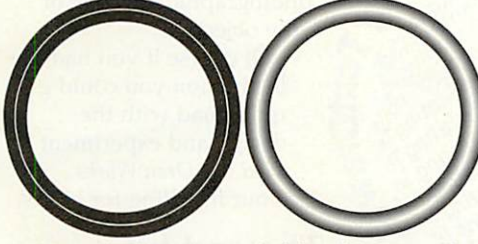
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merged to make a stencil.



Now shading is needed for this text. This is produced using two circles with a different line width. The black circle has a line width of 24mm, and the white one of 1mm. When they are graded they produce a shaded circle which can be placed behind



the stencil made earlier.

As can be seen from the picture we now have the text that goes around the outside. However in the original version this text has a black border and now this needs to be added. This is done using a copy of the bits of text that go round the circle and simply setting the fill colour to none and the line colour to black. The line width is then set to 1mm. Then both this object and the shaded text can be selected then grouped to Centre and Middle using the Justify tool.

This now only leave us with the text that wraps around the sphere in the other direction. This is produced using the DrawTrix tool and the 3D.Cylinder effect.

Having made this next piece of text it now needs to be filled white and have a

DrawWorks Manipulating Text

rawWorks Manipulating Tex

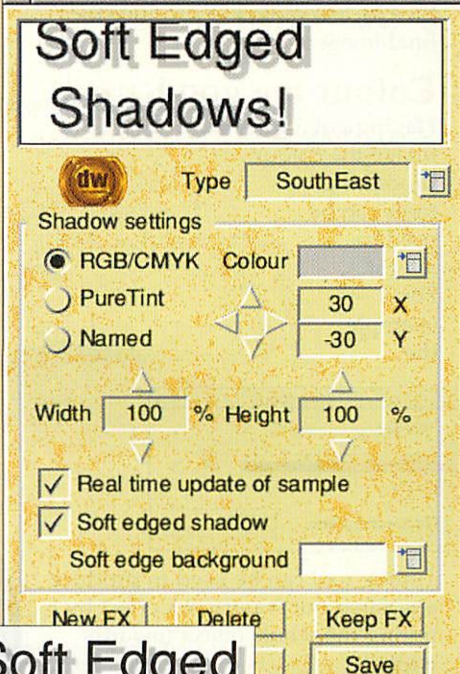
black outline applied. This is best done using the Lining Tool. Using the BigBorder effect with the middle line width set to 2mm produces the right sort of result.

Soft shadows

DWNM has a soft-edged shadow tool that produces realistic shadows without hard edges but the softness of the shadow's edge is fixed by the program – or is it?

Once you have an object with a shadow you can make the shadow softer. Simply select the parts of the object that make up the shadow. The easiest way to do this is to select then entire object then click Adjust on the text part to de-select it. Now click on the linescale tool.

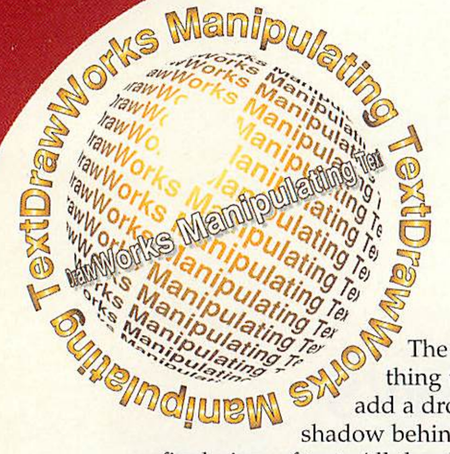
Setting the scale to 200% and then clicking on the "OK" button will soften the shadow.



Shown above the shadow tool and below the result of making a soft edged shadow. The original object is on the left and the new version with the soft shadow is on the right

The built-in line scale tool can be used to change the levels of the soft shadow

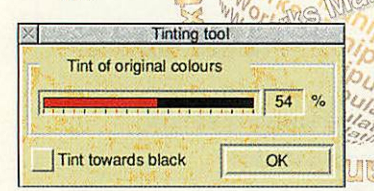
The result of gradually increasing the softening of the shadow using the line scaling tool



The final thing to do is add a drop shadow behind the final piece of text. All the objects can then be assembled to produce the final image.

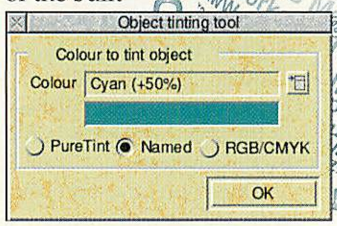
Colour me good

Having got a finished image the colour processing tools can be used to alter it. For example the



Tinting tool can be used to produce a washed out watermark effect by tinting the whole object towards white.

The complete object can be colour processed in a number of other ways, for example the Object Tinting Tool can be used to tint the entire object a particular colour. Any of the built



in PureTint or Named colours can be used.

You could even use an overtint of a colour (for example Cyan + 50%) to produce a duotone using just Cyan and Black. This could then be colour separated. Alternatively any named spot colour could be used instead. It is even possible to produce a photographic negative of the objects.

Of course if you had the inclination you could go quite mad with the design and experiment with the *DrawWorks* colour handling for hours.

The end bit

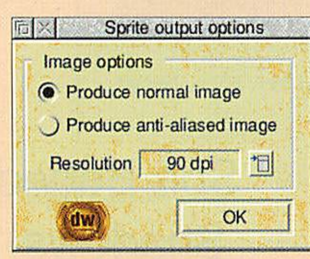
That's it for this article. If you want to know more about how to get the most out of *DrawWorks*? If so then why not contact *Acorn User* and get them to pressurise me into writing another article.

Product details

Product:	DrawWorks New Millennium
Price:	£41.50 (inc VAT)
Supplier:	iSV Products, 86 Turnberry, Home Farm, Bracknell, RG12 8ZH
Tel:	01334 455769
Web:	www.isvproducts.co.uk

Working in oils

Using *DrawWorks* it is possible to make a painting from an image. In the example shown below the original photograph has been turned into a 256-colour version using the sprite export facility and reloaded.

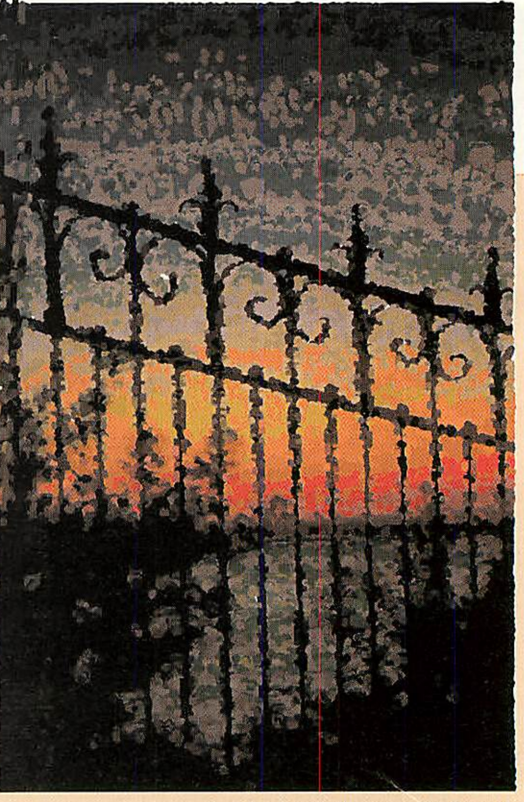


The 256 colour sprite exporter lets you take image out cleanly

The new version has been traced using the *Trace* tool on the DWNM special toolbar. The resulting drawfile loaded back then the line widths set to 4mm and the line joins set to round.

I would certainly recommend a StrongARM, Turbo or Kinetic processor for this sort of effect as the redraw can otherwise take quite a long time.

Modifying the traced object to create the oil effect



A vector graphic (as opposed to bitmap) oil painting produced using DrawWorks









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Extra paper trays & duplex units (not FS-800) avail. Additional RAM recommended for RISC OS fonts.

All printers include driver software for use under !Printers 1.64 or later, including paper-size defintions & head alignment etc Site licence terms available separately.



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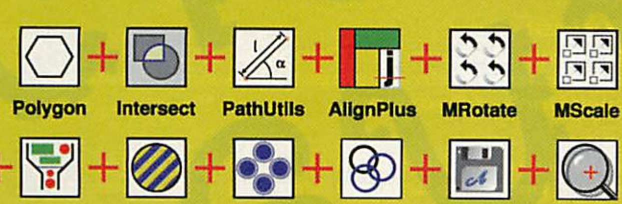
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• Wild Vision TV Tuner Card with teletext facility. Boxed, complete with manuals, software etc. £50. tel: 01223 518579 (daytime) email: **pete.goodliffe@pace.co.uk**

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We are very pleased to announce that from the 1st July 2000 Cannon Computing / Cumana have taken over the distribution, sales and marketing of the Network Computer (Sprinter). The product will have changes made to it and we hope to have the new release of machines in stock by mid September and we will announce more detailed information nearer the time. At time of going to press we currently have a small stock of exisiting Network Computers for those of you that require them urgently.

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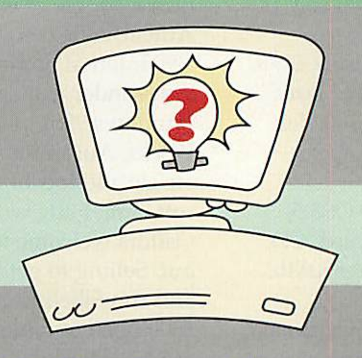
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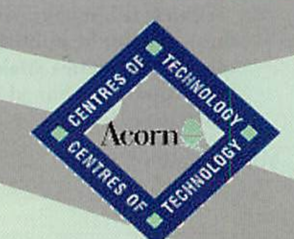
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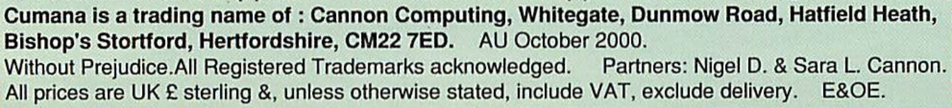








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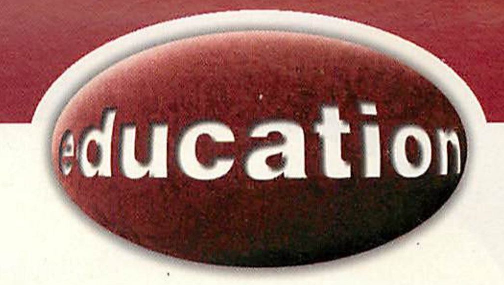










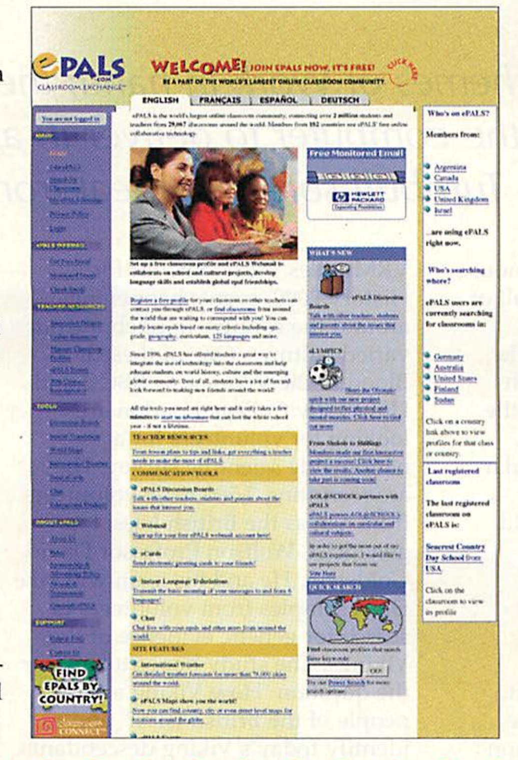


Learning online

Internet learning is not new and hooking up whole classrooms into an interactive learning activity is now commonplace in a lot of US schools. However, north of the border Canadian company, ePAL, is claiming to have created the world's largest online classroom. Promising to serve teachers and students in 136 countries.

ePALS (**www.epals.com**) is a secured virtual classroom. Teachers create monitored accounts for their students and filters scan incoming and outgoing e-mail for profanity or attachments. Questionable e-mails are routed to the teacher who can then approve or reject them.

However, where ePals is different, is with the Web site hosting an instant translation service which allows students who speak only one language to communicate and work collaboratively with those who speak English, French, Italian, Spanish, German and Portuguese - Chinese and Japanese are due to be added soon.



Anglia do more

More additions to AngliaCampus this month in the form of Electricity. Aimed at Key Stage 2, children can discover batteries, buzzers and light bulbs, learn about electrical symbols, and create simple and not so simple virtual circuits by popping along to: **www.angliacampus.com/login/pri/science/eleccomp/index.htm**

In addition there's some interesting views on the GM Foods Debate. Held in July, the edited transcript of this live-chat event is now available. This encouraged schools across the country to put their point of view as well as involving Greenpeace, the Institute of Food Research and Professor Peter Bramley of Royal Holloway, University of London in the debate.

Questions being tackled were: Do GM foods threaten the world's ecosystems? Or will they persuade farmers to abandon the use of damaging agrochemicals? Will GM foods economically enslave the farmers of the developing world to a few large Western corporations? Or are they the answer to a hungry planet?

Mo Mowlam, the Cabinet Office minister with responsibility for GM Foods, said of the initiative from AngliaCampus: "We welcome any opportunity for a well-informed debate about GM technology. The Government is neither pro- nor anti-GM food, but it is pro-safety, pro-environment and pro-choice.

"The UK has the opportunity to lead in this exciting field, and we'll continue to build on these strengths whilst addressing consumer concerns. our own Web site [**www.gm-info.gov.uk**] already has lots of useful information about GM food, and the Internet is a valuable way to discuss these important issues."

This link also includes the results of the vote on some of the central issues surrounding GM foods and is available for Key Stage 2 pupils at: **www.angliacampus.com/login/pri/event/2000h/index.htm**
and for Key Stage 3 and 4 at: **www.angliacampus.com/login/sec/event/2000h/index.htm**

In brief

On the buses

In an attempt to encourage more people into the teaching profession, the Teacher Training Agency has taken to the road with a specially-equipped recruitment bus boasting computers, internet access and systems for aptitude testing. Plus staff to give help and advice on training opportunities, funding and specialist subjects.

You may spot the bus at country fairs or supermarket car parks, in fact the TTA are asking for people to suggest venues to them.

Exam results

As schools, parents and government become more aware of exam-induced stress in every-younger children, Kevin is on hand to help. Harry Enfield's typical teenager has been recruited by The Samaritans to help fellow youngsters cope with the stress and anxiety triggered by less than rosy results.

This new Web site – **www.samaritans.org** – offers survival tips and suggests support services that can help young people anxious about their future. The new Web page is accompanied by cartoon-style press adverts and a new radio ad featuring a spoof top ten countdown by a famous DJ, focusing on the pressures facing young people. Contact: The Samaritans – 08457 90 90 90.

Literacy levels

Meanwhile, teachers may be interested in *Raising Attainment: Improving Literacy in KS2* by Judith Lazell which is designed to help teachers develop the literacy skills of those pupils.

Contacting AU

Pam Turnbull:
educ@acornuser.com



Online resource

With your QCA Schemes of Work in hand; the ICT Coordinator asking how you're using the computer to deliver it; and a tiny budget – what can you do? Pam Turnbull sort the wheat from the chaff on the Web

The Web provides an enormous resource for this subject full of images and original documents. However, as the Internet allows anyone to publish anything, it is essential to check the credentials of any site you allow children to access. This is particular true of more recent history, in particular when it comes to World War II and the Holocaust.

BBC History

www.bbc.co.uk/history

*Star rating: ****

Frequently updated and tying into TV and radio broadcasts, this site stands on its own with information for casual perusal as well as in depth study. This means that you can access diverse information such as: post-war conscription in Britain with an emphasis on oral histories; play the Ancestors game; see if you have the strategic know-how to beat Napoleon at Waterloo; access timelines covering 6,000 years of Scottish and English history. There is an awful lot in this site and I particularly liked the 3-D reconstructions such as a 16th century London Bridge or 19th century Iron Bridge available as VRML files. Also look out for History 2000, events happening around the country to celebrate our varied cultures. One of these is Blood of the Vikings, as BBC 2 and University College London are looking for volunteers for a nationwide scientific survey. They are recruiting 2,500 male volunteers from across the British Isles, top geneticist, Wolfson Professor David Goldstein. He and his team will take DNA samples from volunteers to search for genetic evidence of the Vikings. The study hopes to answer the question 'How Viking are the people of the British Isles?' and to identify today's Viking descendants.

British Literature

www.britishliterature.com

Star rating: **

This is a curious but useful repository for texts on all kinds of British life, literature and history. It makes a useful source for speeches, memoirs, letters as well as novels and poems.

The History Channel

www.historychannel.com

*Star rating: **

Essentially a US site, you'll find history reported here from a definite North American viewpoint, but there are some gems to be found for UK students too. In particular, letters home from World War II GIs, including one written on Hitler's personal stationery. There is also a useful section on letter preservation with tips on how to keep them in the best possible condition.

Irish History

www.okelly.net

*Star rating: ***

An excellent site for anyone researching into Irish or Viking history. Here there is information on the Battle of Clontarf and King Sitric Silkbeard in 1014AD, the Death of Brian Boru, Life of Tadhg O'Kelly, as well as the founding of Irish ports such as Dublin and Waterford.

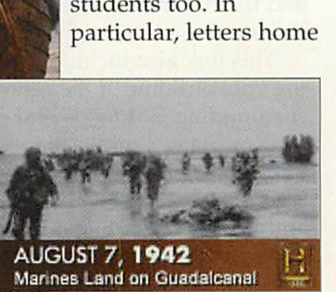
The Annals of Clonmacnois are also covered with information on this major 12th century monastic settlement. The Annals of Clonmacnois were written during the early 1400's and translated in 1627 and give a unique insight into life in Ui Maine from the earliest days of Christianity to 1408.

Indus Valley Civilization

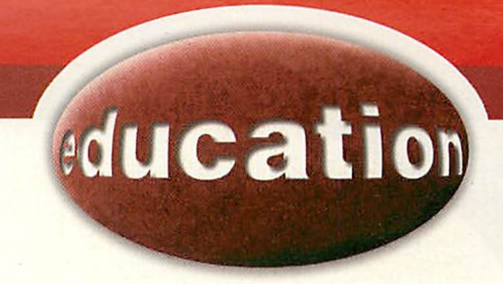
www.harappa.com/har/har0.htm

*Star rating: ****

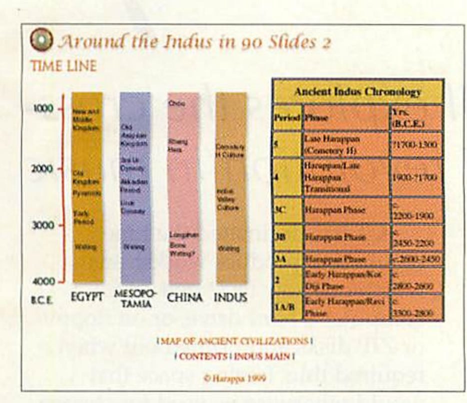
This covers Indian history and culture before 1947. Nicely designed with lots of good quality images and







es – Humanities



slideshow presentations. As well as an introduction to the subject you can read about, and see, recent archaeological discoveries, access Indus script, and track explorers and scholar's work on this little known ancient civilisation. Essential reading.

Viking Network Web

http://viking.no.vnet/e/evnet.htm

Star Rating: ***

Features well-organized, graphically rich historical narratives on subjects such as Viking clothing, diet, sports, games, runes, literature, and ships. Also includes a large selection of easy-to-read maps, information about Viking-related events, details about network membership (no fee required), and a collection of sound bytes of Viking instruments.

World Wildlife Fund

www.panda.org

Star rating: ***

Whether you want detailed but highly accessible and well-written information on wetlands or mountains, or information on baby pandas or rhino numbers this is a nicely designed site which is updated regularly.

In addition, there is information on specific ecoregions and news items on smugglers threatening birds and villagers' way of life in Nigeria. You can also read about different WWF campaigns.

There are sections written especially for children and some excellent images.

Finding Your Way

http://mapping.usgs.gov/mac/isb/pubs/factsheets/fs07999.html

Star rating: *

A topographic map tells you where things are and how to get to them whether you're hiking, biking, hunting, fishing, or just interested in the world around you. This site defines the different maps you can come across and how to interpret the symbols you see there. As well as covering scale, index contours and intervals, this shows in text and with maps and compasses how to determine distance, bearing and direction.

There is also a link to the Earth Science Information Centre (ESIC) which gives a list of US Geological Survey symbols and their recent amendments. Large and clear graphics show just how to determine bearing and distance, useful for teachers and students.

Running the Nile

www.adventureonline.com/basecamp.asp?expeditionid=8

Star rating: ***

Adventure Online is a US site which is colourful and imaginative. It also allows you to follow expeditions to different corners of the Earth. One of the best is Running the Nile.

The team equipped with computers, cameras and kayaks and traversing huge rapids, dodging crocodiles and hippos and meeting different peoples in their 300-mile adventure down the Victoria Nile River. The site itself is rather easier to navigate, with sections on the team, regular updates and images of their trek.



An excellent way for children to discover different regions and interact with people on the ground.

Geography Portal

www.m8i.net/

Star rating: **

Here are some excellent definitions and online tutorials, which would make a good reference tool for the classroom. For instance, *What are the different types of erosion?* gives a simple definition and then adds to this with details of four different erosive forces: rivers, sea, ice and wind.

Access your choice and you'll find information and explanation of this process, such as the four ways rivers can erode – solution, hydraulic action, attrition and abrasion. Not the best designed site in the world but the information is especially useful to Key Stage 3 and 4 students, there are also associated geography sites but the quality of these is mixed.

CNN – Nature

www.cnn.com

Star rating: *

This US-based news information source doesn't just provide the latest information on Presidential candidates. For instance, there are informed articles on current issues such as warmer tropical waters being a portend of climate change.

Rather than just reading a news item or watching a news clip on the TV these articles provide links to the raw data as well as to related stories, in this case from the Environmental News Network.

END

What the stars mean

*	some good points
**	good for teacher resources
***	can be used constructively by teachers and students

Musicality

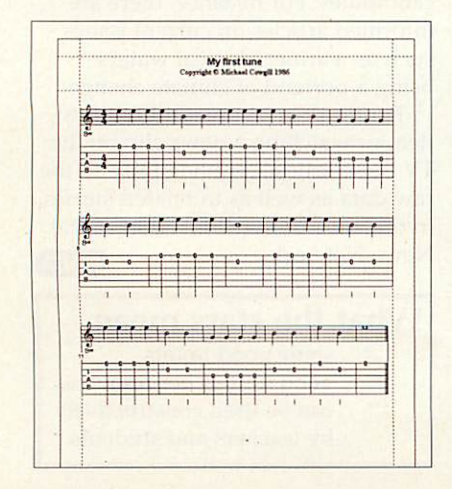
Mike Cowgill explores the cross-platform ICT revolution in music

When I first started teaching musical instruments in the mid 70's, computers were huge machines sealed off in dust-free environments, tending to break down if the slightest speck of dust invaded this pristine space. Programming was by punched cards, and if one card got out of place the whole program would crash. Computer Studies was not an option at school, although I did learn about number bases and Boolean logic.

The idea that such a machine could be any use in the teaching of music was like suggesting there was life on Mars. The first synthesisers and samplers were beginning to be used, particularly in popular music, but they cost more than a terraced house, and beyond the reach of most people.

The 80's was the age of the home computer, due to the semiconductor industry's major breakthroughs in miniaturisation. In 1983 the MIDI Manufacturers Association launched the MIDI 1.0 communications protocol for electronic music equipment. This was the launching pad for the revolution that was to hit music making.

he second breakthrough was the launching of home computers like the BBC Micro, Commodore Amiga and Atari ST which were responsible for much home music making – the Atari ST, in particular, becoming something of a standard within the music industry.



In the late 80s I bought an BBC A3000, which revolutionised my life due to an application called *Rhapsody*. Now, instead of spending hours with pen and ink creating worksheets and photocopying them at the library, I could create them in minutes and print them out as needed. I could also store them on the computer in a fraction of the space that the old paper masters took, and without the degradation of the original that the paper masters suffered from after a period of use.

The 90's saw the rise of the IBM PC compatible, which, together with the rapid fall in the cost of RAM and the huge advance in the speed of processors, has given musicians powerful software to work with, making it possible for musicians to produce high-quality recordings at home. The MIDI communications protocol was revised, becoming the General MIDI standard, ensuring music will sound the same on all GM systems.

The other major advance is the Internet. This has enabled the dissemination and discussion of ideas on a global level, enabling the transmission of documents, recordings and graphics at a fraction of the cost of conventional means. It is also a vast library of resources ranging from lyrics to rare recordings of musical performances.

Available resources

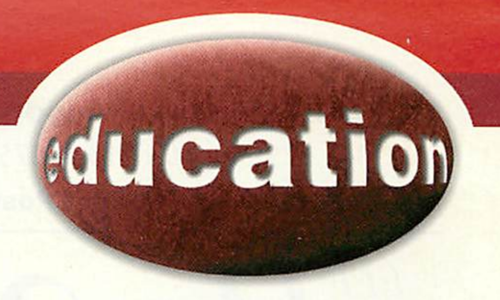
There are four areas where ICT is of interest in music teaching: The production of learning resources; the learning of compositional or notation skills; the learning of recording techniques; and the storing and reproduction of examples.
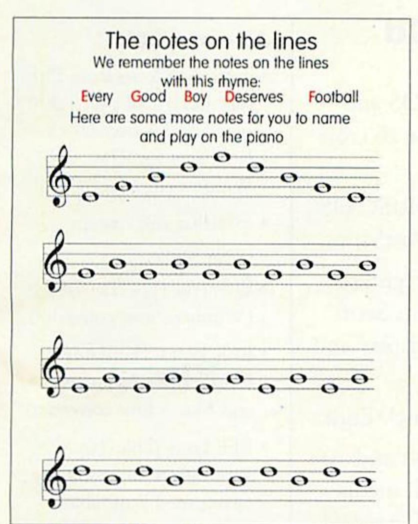
ICT has decimated the time required to produce worksheets which can now be stored on a computer's hard drive, or on floppy or ZIP disks and printed out when required thus freeing space that would otherwise be used for storage. It is, therefore, easier to update material, and with DTP software to incorporate meaningful graphics to improve the presentation, learning resources. Applications like *Finale* make the mixing of text, graphics and music notation easy, obviating the need for exporting music notation to DTP software in graphic form.

MIDI sequencers like *Cakewalk*, *Cubase* or *Logic Audio* enable students to communicate musical ideas directly to the computer, see the result in music notation, and then try orchestrations or instrument combinations. This means that, given access to the right technology, students can try out composition structures and hear how they work in the real world.

They can also compose without music notation: The tyranny of the stave has long been a hindrance to beginning composers, and ICT has freed them, but also enabling them to develop their notation skills by translating the notes they have played into music notation, particularly if the piece is transferred to notation software like *Rhapsody4*, *Finale* or *Sibelius*.

Most MIDI sequencers also provide facilities for the recording of audio data direct to hard disk. The sophistication of these facilities is such that once the necessary skills are acquired, professional-standard recordings are possible. Recording skills can thus be learnt anywhere where there is access to a computer. Such software usually includes digital effects processing, so students





can learn what effects are available for processing their sounds without having to resort to expensive equipment.

Perhaps the biggest asset of ICT to the teacher is the ability to store and retrieve audio, MIDI or graphic data. The Internet is important here, as it makes resource libraries accessible to anyone with an Internet connection, the study of resources is no longer limited to students congregating at a venue, but also remotely; either at home, or at an ICT centre. This means that with video-conferencing technology, a teacher could take a class of individuals sited in many different locations.

A teacher's life

The implications for teachers may be frightening for those used to traditional teaching methods, but ICT provides the means to be better educators as it frees teachers from the drudgery of resource preparation, providing more time for better lesson preparation.

It is becoming clear that the old teacher-model of standing in front of a class, acting as the sole communicator of knowledge is rapidly dying, if not already defunct. Before recent developments in ICT it was difficult for students to obtain specialist information other than from their tutor or local library. Now it is a matter of knowing the best search-engine to access for the necessary information. The teacher's role is, therefore, becoming that of guide rather than pedagogue.

However the teaching of musical instruments and performance skills is little affected by recent developments in ICT – the teaching of instrumental technique certainly has not changed, although the Web means that new ideas and teaching techniques are more easily disseminated, and learning resources easier to find.

Learning music notation doesn't carry as much weight as it used to but it is still an important part of learning to be a musician, particularly when performing music written by dead composers, but at the twentieth century's close it is probably more useful for a musician to know MIDI sequencing, than to read music notation.

Musicianship techniques have changed very little: The rules of harmony will always be the same, as will composition structures, and musicians will always have to train their ears. ICT makes it easier to teach, it being obvious to the student why consecutive 5ths and octaves should be avoided, and why certain chords are only used in certain ways as they can hear the result immediately. Composition structures can be tried out on the spot, and aural training performed using applications written for the purpose.

ICT also means that students can no longer adopt a passive role in the education process, but must take an active part in their own learning. This can lead to confidence problems that the teacher must be ready to deal with. Although the learning process is more challenging, results are good, with more people achieving better standards of musicianship. Students also find their work more rewarding, because although there is greater challenge, the tools at their disposal through ICT, remove the drudgery that used to exist in the learning of musicianship.

Conclusions

ICT has affected the musicianship curriculum surprisingly little: The core elements which musicians will always require remain the same, and it is difficult to see how they could be taught differently. The fact that student and teacher may be at either end of a video link doesn't change the way things are taught.

The only big change is in the importance of understanding music notation which, instead of being absolutely vital, is now only very desirable. The big changes are in how ICT has affected teacher/student roles, and in removing the drudgery from the teaching and the learning process.

Mike Cowgill is a music teacher and also runs the Score Machine, music services company

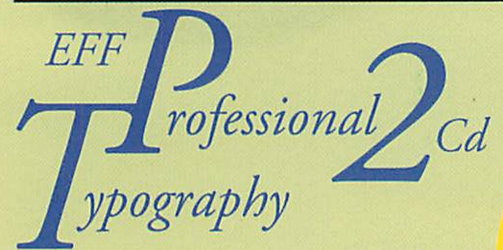
Some useful URLs

www.musical-theory.com	Online music theory lessons
http://perun.hscs.wmin.ac.uk/~jra/NMD/	abc version of Nottingham Music Database containing thousands of folk tunes
www.cddb.com	Information database of just about every audio CD ever made.
www.sospubs.co.uk	Sound on sound magazine: UK's biggest recording magazine
www.eskimo.com/~ogre/	The Online Guitar College: Learning resources for Guitarists
www.tabledit.com	Cool PC tablature editor
www.musicrobot.com	MIDI file search engine
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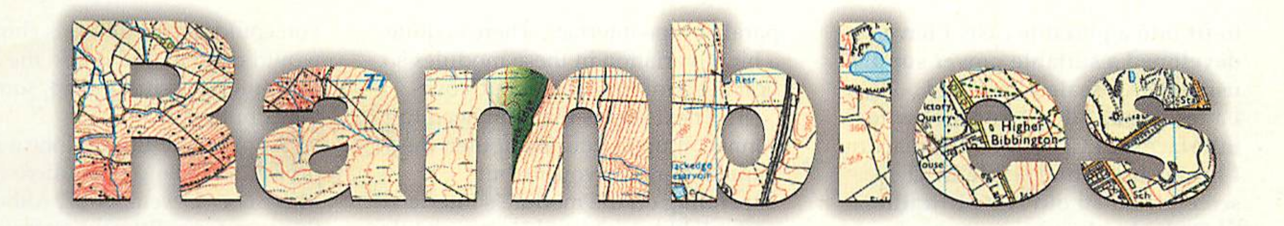
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RISC OS



Mike Cook checks out the wildlife

With all the fuss in the media lately about e-mail viruses I am sure users of platforms other than Microsoft are feeling rather smug. However, I was rather amused to receive a Linux honour-ware virus. It said that the recipient was obliged to pass this on to ten people in their address book, and to delete several files at random from their hard drive.

Speaking of the devil incarnate, we have grown used to being smug about backwards compatibility on our platform, but I wonder how much this smugness is justified. First there was the letter in the August issue by Matthew Sackman who was basically saying that programmers were not actually any good at writing manuals or making sure an application will work on a particular set-up.

Then there was the games cover CD where most of the things I clicked on just crashed in some way or other. Quite simply this is not good enough, ours is a small market and it behoves us all, when creating a product, to do as much as we can to make sure it is available on the widest range of platforms. There are mechanisms where by a program can check if a module is present, check the amount of memory, or even the presence of certain critical hardware.

It is up to us to use them and prevent the non-expert user encountering hours of frustration. Also it would not be too much to ask that authors put a help file in applications explaining what the application is actually supposed to do. Lack of attention to details like this is ruining the perceived professionalism of the platform.

A question I get asked from time to time was that of adding a high density disc drive on some of the older RISC OS computers. Well I came across a Web site that tells you exactly how to do it, find it on **www.tec.puv.fi/~s00001/hdupgrade.html**

Now onto the problems, Roger Richards from the other side of the world is having a little trouble:

Q "Our school was recently given an A3000 fitted with a hard disk drive. The computer was inadvertently reset by switching it on while the Delete key was held done. The Drive 4 icon disappeared from the iconbar. I restored it using Configure, but get only a Bad Drive error when I try to access the hard drive."


A As you know a Delete power-on resets the configuration of the computer to the default values. The A3000 did not have a hard drive fitted as standard so it defaults to none. The problem here appears to be that you don't know the history of the machine. For example is this a third party disc upgrade that needs drivers and patches? That's what it sounds to me like is happening. Have you opened up the machine to see what you have, or contacted the donor?

Check that no relevant modules have been unplugged. Only consider reformatting as a last resort. With the magic of e-mail I was able to find out he had solved the problem:

I "Thank you for your prompt reply to my letter regarding my problem with the A3000 hard disk drive. I am glad to report that I have now solved the problem.

"The mistake that I made was to suppose that I could reconfigure the hard disk drive using the Configuration utility. Although the machine appears to have an IDE drive (whatever that is), neither setting the number of IDE hard discs to 1 nor using *Configure IDEDiscs 1 worked.

"However, *Configure IDEFSDiscs 1 finally did the trick. This option does not appear on my own A3000, which also has RISC OS 3.11. Presumably this command is available with whatever podule ROM is installed with the hard disk."

Chris Cotton wants to resurrect some old damaged machines and do some customisation into the bargain.


Q "I have recently acquired two Acorns with damaged casing, an A3000 and an A3020, and I am considering converting one of them into a laptop. The parts are small enough



to fit into a portable case. I have developed a suitable power supply, using 2.3Ah sealed lead acid batteries but I don't know how to interface an LCD screen to an acorn. I have a black and white LCD screen from an old NEC Ultralite SL/20 laptop handy – can this be used? Please help, as nobody I've asked so far has a clue."


While I can't tell you exactly how to do it I can tell you what you need to do. First of all you need to get some information about your LCD module, most modules have their own processor to handle the low level stuff and interface to the outside world with a parallel-type interface. There is quite a bit of variation in these modules so you need information about yours.

The next step is that you need to connect it up to your computer, the parallel port is favourite but depending on the module's interface you might have to make up a podule with extra I/O. Now having got the hardware in place all you have to do is to write a VDU driver for it. You do this by claiming the VDU extension vector and have your routine direct all the VDU calls to your hardware.

The OS does have a built-in LCD driver but that uses an ASIC (special custom chip) to interface to whatever LCD Acorn used on their portable. If you could get hold of this chip you would need to add it into the computer's memory map, something that's not really on.

Surprisingly I have done a similar project on the old BBC Micro in *The Micro User* December 87. Although this was for a different operating system and processor the general principles are still the same. I know there are a few people out there who have done this sort of thing so would anyone like to share it with us all?

Contacting AU

Mike Cook:
rambles@acornuser.com

Richard Casson lives quite a long way off and requires a little help:


"I was adding some programs to an A4000 which I had refurbished for the Secondary School I used to teach at. Having added several programs I foolishly decided to add Impression *Style* even though the memory was only 2Mb. Just as the install was ending I suddenly got a 'disk full' message and the install stopped. Upon checking there was plenty of room and the install seemed to be OK.

"When I went to update the boot file I got the error message, *SWI not found* with no number. Fearing it had to do with the install of *Style* I removed it and tried to reinstall the program hoping a proper installation would cure the problem. This time after almost completing the install the error message (SWI not known 1780) appeared.

"After boot up if I access the hard drive I get the usual activity the screen flashes and after a little more activity the error message (SWI not known) The boot file can be saved if I do it from the Acorn icon (RISC OS 3.1) on the desktop before I try to open the hard drive. Once the hard drive has been accessed the boot file cannot be accessed or saved and any pre existing boot file is erased from the hard drive if I attempt to save an updated boot file.

"*Configure* also has a similar problem. As long as I have not accessed the hard drive I can change the configure files. Once I have accessed the hard drive I get the following error. 'S doesn't exist:sprite doesn't exist.' It seems any attempt to access the Boot file will get this error. Once I access the drive I can load all programs and save files as normal. It seems that if a program tries to call something from the hard drive it can't. I hope that you may be able to suggest some solutions. I have checked that all modules are plugged in and seem to be ok. Any assistance would be appreciated as there is no handy tech support here in Canada."


Basically "SWI unknown" occurs when an application is trying to access some software in a module that has not been loaded. The 1780 in the error message is almost certainly the line number (in a Basic program) where the error occurred. So it looks like there is something that is trying to run in your boot up sequence before the appropriate module has been loaded.

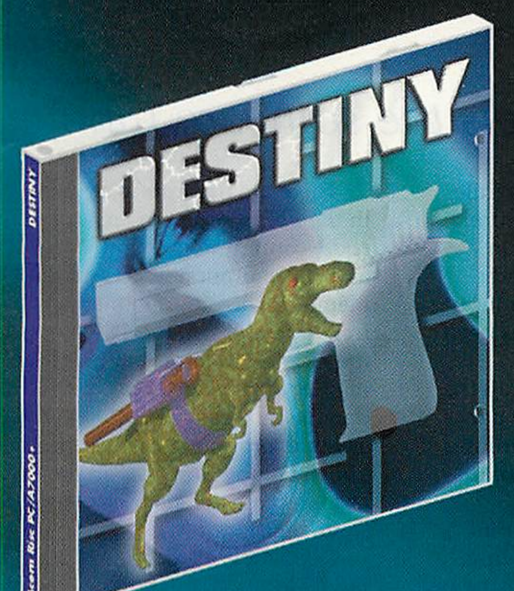
I am not sure why you are trying to edit your boot sequence, personally I like as little as possible to be loaded on switch on to keep my machine "clean", I have 48Mb free so with only 2Mb on your machine I would have thought that this was even more important. What you need to do is to remove the offending program from your boot up sequence, I know, easier said than done.

As your problems appear later on in the sequence look at the end first and remove any "non-standard" applications. That is any applications that were not included in the original OS when you first installed it. Remove them one at a time into a temporary folder and also look in any obey files to make sure they are not called up.

Start with the Choices folder, then the Resource and finally the Utils. If this fails then you could try reinstalling the initial boot structure from the original OS discs, I know this is the standard PC (uck) solution but here it is appropriate.

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The bigger PIC

Mike Cook gets the software running

Last month we started off by looking at the hardware you need to program the 16C87X family of PIC controller microcomputers. If you recall you don't need a programmer because these devices are programmed "in circuit" – they are programmed in the final application by serial pulses. All we had to do was to provide some way to buffer our user port pins and make one pin a programmable input/output line. We also saw the basic wiring we need to make to this chip so all that's missing is the RISC OS software to complete the job.

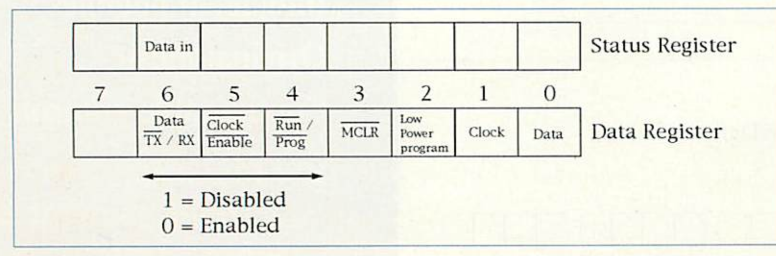
The 16C87X uses the same machine code instructions as the 16C84 devices I first used a few years ago. However, I have made a tiny addition to my assembler to add a pseudo op code EQUW that allows you to define a 14-bit number to place in the code to cope with the 14-bit configuration word in this device.

Last month I showed you the hardware and Figure I shows how the software sees it. Bits 0 and 1 are the data and clock allowing you to input and output programming data serially; Bits 2 and 3 control the device going into programming mode; Finally bits 4 to 6 allow you to tristate the printer port buffers, in effect turning them off.

Bit 6 turns off the drive to the data pin to allow the PIC to send data back to the computer; Bit 5 controls the enable on the data clock; While bit 4 turns off the program control bits effectively giving you a run / stop function. Bit 6 of the printer status register acts as the data input once the data output drive has been disabled.

So with an introduction to all the bit players, let's see how they dance. The PIC is held in reset by putting a zero on bits 2 and 3, if those inputs are then released the PIC will perform a reset as the MCLR pin floats high through a 1K pull-up resistor. This starts it running, always assuming it has some code in it to run that is.

This device is capable of being programmed in a high voltage or low voltage mode, in this project I am only considering the low voltage mode: 5V signals. To put the PIC into programming mode we need to raise to 5V both the MCLR pin followed by the RB3 or PGM pin then it will respond to a number of commands sent to it serially. This is done by outputting the data when the clock is high and then lowering the clock, data is clocked in on this falling edge. Each data word consists of a start bit of 0 followed by 14 data bits finishing up with a stop bit again of 0. The full command set is shown in the table, note there are only 6 bits in a command.



The programmer's model of the interface

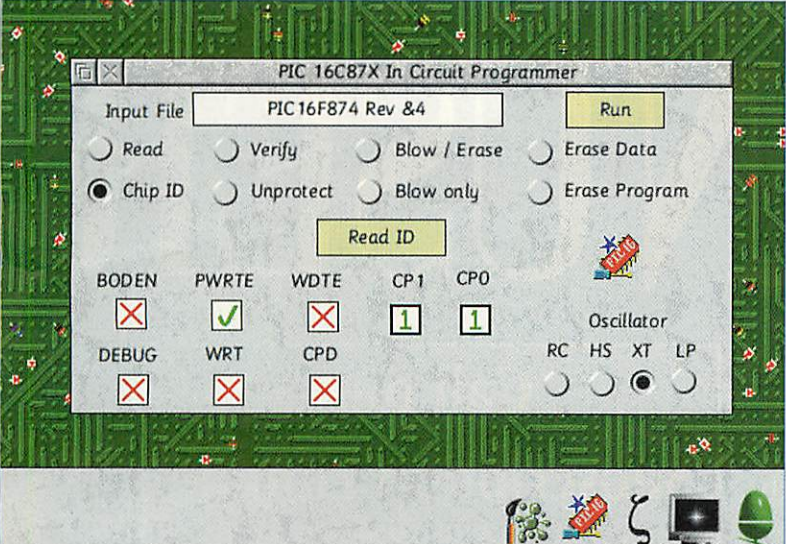
There are three areas of memory in the PIC, a program area for your code, configuration memory for ID and configuration word and data memory. The program memory goes from 0 to &FFF in the 4K devices like the 16C874, and the configuration memory from &2000 to &2007. The data memory sits at &2100 to &213F as far as programming is concerned but a running program on the PIC has to access this memory through some registers.

One of these locations (&2006) is the ID location, this can be read by the programmer to see what chip it's addressing and so know how much memory to expect. Note that this bit pattern tells you the the revision number as well. Inevitably with a complex chip there are bound to be some small errors and these are corrected for in later revisions. So these devices have there revision number burnt into them rather than it just appearing on the package.

There was some criticism of my 16C84 programming algorithm taking too long to program a device, especially on the slower processors. This was because it had to read each memory location in the device to see if it contained the required bit pattern. So no matter how long the program was all the locations had to be read. This time I have adopted a more flexible approach but at the expense of fallibility.

Before the hex file to be programmed is read all the bytes inside the computer are set to &FFFF, however, as the maximum word length for a PIC is 14 bits programming all 1s in a word will set the computer's memory to &3FF. So the programming application can see if a location in the computer's





How the new programmer software looks

memory needs to be programmed into the PIC. The down side is that if the PIC contains some other bit pattern at a location not used in the hex file it will remain there after programming unless you perform an erase cycle, but this way short programs are quick to download.

The other thing that took some sorting out is the configuration word. Some bits of this act as memory protection bits, if these are set you can't program some or all areas of memory. So when you reprogram a device that has been protected you would normally have to perform a bulk erase. What my application does is to clear the configuration bits if needed first, program the device, and then put them back to their protected state.

These bits are meant for the protection of memory once the PIC code is running not to prevent reprogramming. So during programming each memory location is checked in the computer's memory to see if it is not equal to &FFFF, meaning it needs to be programmed. Then it checks the PIC memory to see if it already contains that pattern, only if they are different does it enter a program cycle. This saves time as a program cycle takes at least 10mS, and with the resolution of the timer available to BASIC this has to be set to 20mS. This doesn't sound long but multiply this by a few hundred instructions and it will take some time even on the fastest machine.

My application is called *!ICP*, standing for In Circuit Programmer and is an expanded version of my earlier PIC16C84 application, at least the user interface is. To use it drag the hex file produced by the assembler into the window and then click on the radio buttons at the top of the window to select the function you want.

This function then appears on the central button, and pressing it will activate the function. The file icon is used to report back the results of the function, for example the device ID or confirmation that a program has been successfully blown. The check boxes and radio buttons at the bottom of the window define the bits in the control word.

The crosses or ticks indicate whether you have the function or not they don't indicate a zero or one. So to enable the Power up timer enable bit you put a tick in the box despite the fact that the configuration word needs a zero in the appropriate bit to activate this function. The "Blow only" operation programs the chip using the Program cycle-only command and should be used only if the chip has previously been bulk erased.

The read operation generates a file containing all the memory locations in the PIC including the erased ones, this is because even the default erased bit pattern corresponds to an instruction and it might just mean it. The resulting file can be saved using the menu and it's main use is in debugging to see what you have in the data memory, if you are using it.

There is a debug box to activate the in-circuit debugger but unfortunately at the moment nothing much can be done with this because the manufacturers have not yet released the information on how it works. When they do I will be able to write a debugging application that single steps, sets break points and dumps memory and registers.

Finally once the program has been programmed into the PIC the button at the top right of the window will control your PIC circuit to run or stop. With no transferring of chips between programmer and target circuit the assemble, program, run, crash cycle is much shorter.

Next time we will look at some practical projects using this PIC device. END

Command	Byte in hex
Load Configuration memory	0
Load data for program memory	2
Read data from program memory	4
Increment address	6
Begin erase program cycle	8
Begin program only cycle	18
Load data for data memory	3
Read data from data memory	5
Bulk erase program memory	9
Bulk erase data memory	&B

The programming commands for the PIC

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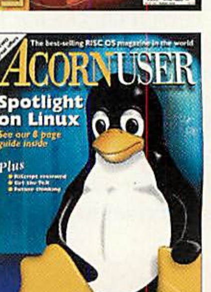
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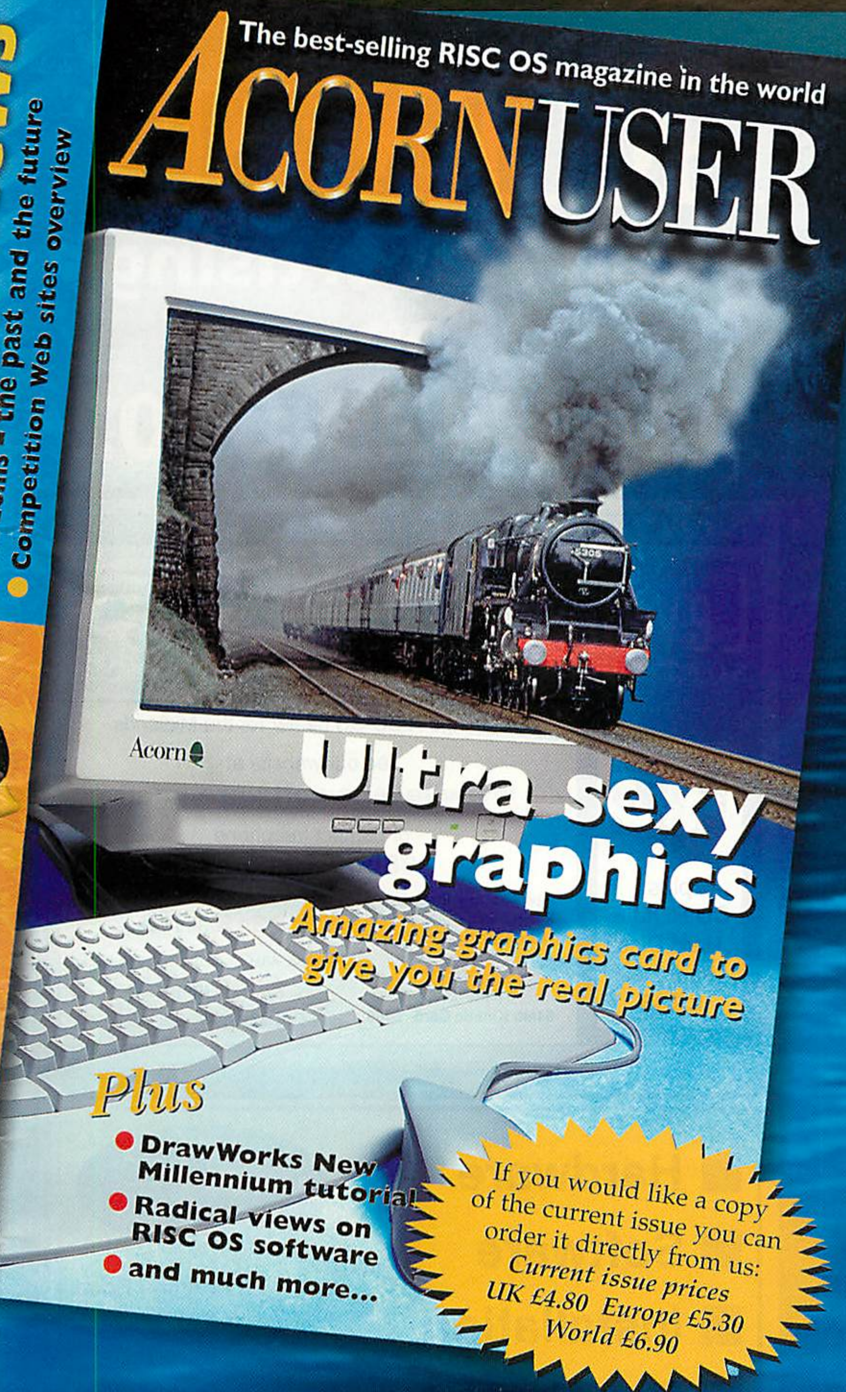
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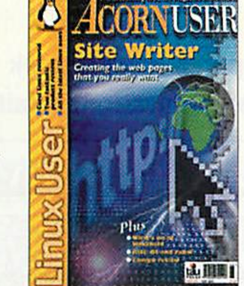




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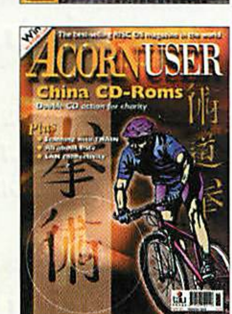
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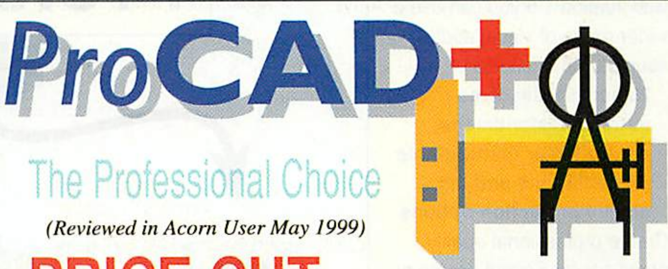
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I have a thing about books. When I found out that Rik Griffin programmed library systems, how could I resist interviewing him? I dream of having a small library with a balcony; now I can also have my RISC OS machine in the corner with with my library catalogue running on it and play at being a librarian.

Rik Griffin works for Micro Librarian Systems (MLS), who write library automation software for schools. This software helps school librarians keep track of who's got books on loan, reservations, and the like. Rik got the job after finishing at Sheffield Polytechnic and answering an ad. He was keen to work in an area of computers that he enjoyed.

'Personally, I maintain the RISC OS version of our *Junior Librarian* software,' explains Rik. 'This involves not just programming, but also telephone support, fiddling with hardware (bar code readers and the like), authoring user guides, designing artwork, making tea and so on. Plus I have been doing a bit of of contract work for RISCOS Ltd. That's partly MLS related, though.'

Rik believes it was quite natural for him to be interested in 'technical things' because his mother is an electronic engineer and used to design flight simulators, among other things. Rik's first computer was a ZX-81.

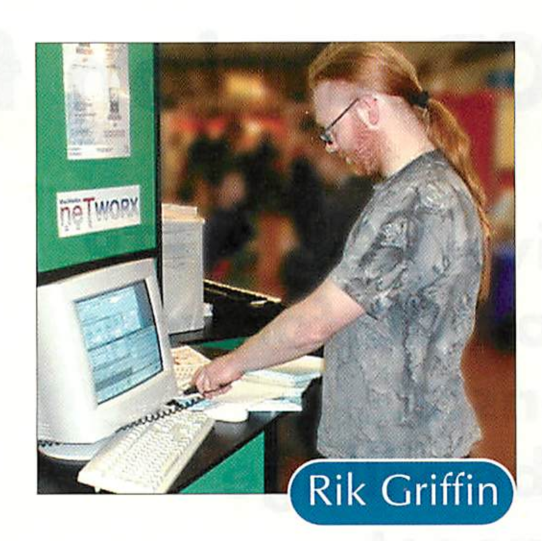
'My first real machine was the good old BBC Model B. I wrote a game a few years ago, which sold moderately well. It was a good way to teach myself programming in C. It was *Tanks*, quite a fun and addictive little game, but it suffered from the usual problem that affects home-grown games, that is, programmers can't draw.'

Ask Rik what he does for fun and you get: 'Occasionally I program for fun, although since I've been doing it as a job, I do it less in my spare time. Mainly, my leisure time is occupied with riding motorbikes, taking motorbikes apart and putting motorbikes back together again.'

To say Rik has a bit of a motorbike fetish is an understatement. If you ever meet him at shows, not only will you see that he fits the caricature of a 'biker' well, with his long red hair and leathers, you will also find out that he has several motorbikes. If you are very lucky you will meet his rather sexy Fazer.

'I've actually got a few. The nicest is a Yamaha Fazer, 600cc of two-wheeled fun. I've also got a 125 that I commute on, cheap, and a couple of others that are in various states of disrepair. I'd love to buy a Triumph, but I can't afford one. The Fazer was the right price, and looks funky. Most importantly, it's a dream to ride, although I get a bit sore after about 200 miles.'

Rik even manages a very valid an analogy



Rik Griffin

between the preference of riding a motor bike and and using a RISC OS computer. I get the feeling he has had to justify both on several occasions.

'I think RISC OS machines are great. I have a PC, and I have an Acorn. The Acorn gets used for serious work, programming, graphics design, e-mail and so on. The PC gets used for two things: RC5 cracking, and playing *Starfleet Command*.

'The Acorn vs PC arguments have been done a thousand times in the newsgroups. In the end it's down to personal preference. People ask me why I ride a motorbike when I could have a nice safe comfortable car. Unless you ride a bike, you can't understand. It's a similar thing with RISC OS computers; people have an illogical loyalty to them, and long may it last.'

As for the future, Rik would love to carry on programming exciting stuff and getting better-riding motorbikes, a concept which is not often understood by people. To most getting better at riding motorbikes is just riding at a faster speed.

'On good days, I'm very enthusiastic. On bad days, I think about giving up programming; no way will I become yet another Visual Basic programmer. In general, I think RISC OS has a good future, although perhaps not as the desktop OS we all know and love.'

Rik is supposed to be on the committee of the Manchester Acorn User Group, but he has not been to a meeting in months. If they kick him out, then Rik may have to take his Fazer on a 'grand tour' to one of the European music festivals so he can get to see Fields of the Nephilim play live. 'Fot Neph' are a goth band, and not for the faint-hearted, but then Rik does claim that his musical tastes are eclectic.

'This moment hangs, like your ragged hair' as Fields of the Nephilim do say.

Jill Regan

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What's the point?

It's been interesting reading the correspondence in *Acorn User* encouraging RISC OS users to upgrade to the latest version and support the developers. Oh and to tell others about RISC OS and how easy the applications are to use and so on. The latter is something I have done with success might I add.

However, Joe Public sees the Windoze fraternity eagerly upgrading his software, his operating system, and nay, his computer, to cope with the new memory hungry latest MS offering. But I thought the Acorn/RISC OS community surely wasn't like that – or may be this is how the dealers now wish us to be. Buying every upgrade, even when the old OS still works ok, and the old A5000 of 1992 vintage still provides a very adequate platform to run an adequate DTP package.

I say adequate, but what is adequate. I have an A5000 running *Style* which works very well. I have a StrongARM Risc PC 3.7, and it is quite adequate, running *Ovation Pro*. I do indeed think I should upgrade to 4.xx, but what encouragement have I to do so when I think there is so much to encourage me not to.

Look at the price of a Risc PC in its basic form, and add the cost of some kind of DTP package such as *Ovation Pro*. Compare that to a 32Mb AMD K62 550 computer, 5Gb hard drive, 56x, CDROM, 15inch monitor, Windows 98 MS Works 2000 95/98 complete with Epson stylus 670 colour printer, Internet-ready machine, complete with a pair of speakers.

But that's not all, upon double-clicking on a JPEG image on this cheap PC the image come up on the screen, and I can print it out and pretty quickly too. I can double-click on the sprite equivalent in the StrongARM and using Canon BC7100 with Spacetech driver without using Photoreal but 600dpi, graphic or photo selection print out the same image.

The quality of the Risc PC is abysmal compared to the PC. Even dropping the sprite into *Ovation Pro* and waiting for that to print at 300, 600 or photoreal, is in no way comparable to the PC. The PC driver automatically selected the quality of printing.

The above PC spec was bought for my daughter for her university work. She is used to MS word, and she is very much used to the DTP packages on the RISC OS computers, possibly more than the PC, but I don't want her to have to go through any converting of files to be compatible with the university system. She would have quite happily used a Risc PC, but I pointed out that her assignments will look better printed from a PC. So who killed the sale?

So, why should I upgrade to RISC OS 4, or indeed, not only upgrade to RISC OS 4 but also look at buying (which I was) an additional Risc PC which is now the *Kinetic*. I do know which platform I would rather use, simply because its reliable, fast and has this 'longevity' that used to be used in the RISC OS world, which has latterly become forgotten or omitted. Windows is very slick, and we cannot pretend it isn't. The computer world has moved on it seems, and the RISC OS fraternity is still ... well ... stuck.

"philco"
by e-mail

That RISC OS could be better equipped has never been an issue – and the blame (if blame need to be laid) as to why it has lagged behind lays firmly at the door of Acorn as was, and the reasons for that have been done to death.

Now we have to catch up and that's the game we're playing. It isn't going to happen overnight but it is going to happen.

Interview technique

With respect to the interview by Jill Regan of Mike & Alec Cook, I would like to point out that I do not mumble or hesitate when I am talking. So therefore the group in question that *JJ72* supported was *Embrace* and not as printed "Brace". Also Martin spells his name Carr. Quite something, a dyslexic being able to pick up spelling mistakes.

Mike Cook
by e-mail

Transfer problem?

The problem with *Premier Manager* that Andrew Simpson mentions in his letter in the August issue of *Acorn User* is probably due to a fault that was present in versions of the game earlier than 1.07. A problem with the operation of the transfer market for computer controlled teams meant that over time, some of them could end up with too few players and if you played a match against such a team, the game would crash. The solution is to use the version of Premier Manager (1.08) on the *Acorn User CD* for the August magazine, together with the update file that you can find on the CD support site at **www.paulf.johnson.redhotant.com/**

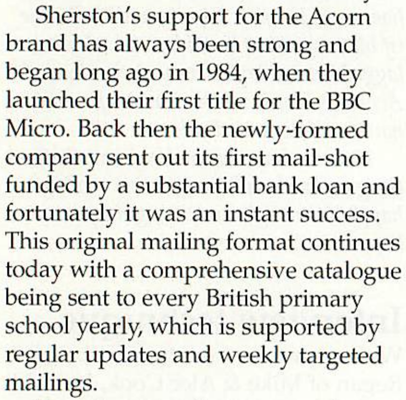
If you have any saved game files created by the old version of *Premier Manager* that you want to use, use the supplied *FixPMGame* utility to repair them.

James Byrne
Japan

New software every month

When many other publishers have slowed or stopped their RISC OS software development, the past twelve months has seen Sherston Software launch seventeen multimedia CD-ROMs on the RISC OS platform.

Situated in a converted seventeenth century coaching inn on the southerly tip of the Cotswold Hills, Sherston Software was founded by primary teachers Lou and Bill Bonham sixteen years ago. Since then the company has grown steadily, to become one of the largest independent publishers of high-quality educational software in this country.

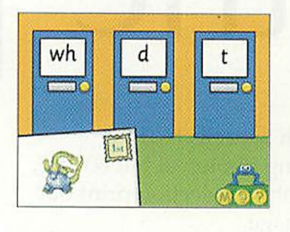


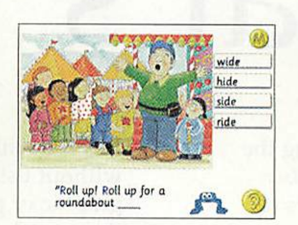
Sherston's support for the Acorn brand has always been strong and began long ago in 1984, when they launched their first title for the BBC Micro. Back then the newly-formed company sent out its first mail-shot funded by a substantial bank loan and fortunately it was an instant success. This original mailing format continues today with a comprehensive catalogue being sent to every British primary school yearly, which is supported by regular updates and weekly targeted mailings.

Over the years the company has seen many technological changes in how software is delivered, from cassette tapes to CD-ROMs and now the Internet. Sherston's success in recent years has been based on their triple-format authoring tool called *Playbook*. Using this innovative system, they have produced over 40 multi-format products since 1996, which has allowed the CD to be used on all three computer platforms being used in schools (Acorn, Apple and Windows).

Most of their recent launches have been focussed on the Government initiatives on Numeracy and Literacy and the response from schools has been excellent. With the up-and-coming Sydney Games in mind, one of the most interesting Numeracy releases has been the *Mental Maths Olympics* titles for Year 4 and Year 5.

Both *Mental Maths Olympics* CDs have been carefully designed to teach and practise the specific mental calculation strategies outlined in the National Numeracy Strategy Framework. The animated explanations of the strategies show exactly how they work and the sums presented to the children are carefully selected and graded to make sure they actually apply the appropriate strategy. A record keeping section tracks all children‹s results, including last scores and best scores to motivate youngsters to improve their performance over time.







Each Mental Maths Olympics CD comes with extensive supporting printed materials to use in the classroom, including photocopiable medal certificates and personal score booklets to encourage children to improve their 'mental maths' performance.

The most exciting launches this year for Literacy have been three new titles from Sherston and the Oxford University Press. The *Big ABC*, *Sound Activities* and *Sound Stories* have brought stimulation, enjoyment and hours of interactive learning to infant literacy lessons and are based on the popular Letters, Sounds and Rhymes strand of the Oxford Literacy Web.

Packed with songs, stories and activities focussed around the initial letter sounds of the alphabet and four consonant digraphs, the CDs have been carefully designed to work effectively both on their own and as a complement to the existing paper-based materials.

- *Big ABC* has an enchanting musical rhyme for each of the thirty initial sounds, followed by focused listening and spelling activities.
- *Sound Activities* has four different activities – two listening and two spelling – which can all be set for any combination of letters.
- *Sound Stories* contains thirty alliterative talking stories. Each one concentrates on an initial sound, and is followed with its own listening and spelling activities.

Each CD will help to develop children's phonological awareness, alphabet knowledge, and their understanding and use of initial letter sounds. There is also a friendly spider that provides children with extra support when needed, reinforces key teaching points and rewards correct answers. To help teachers use the CDs effectively in literacy lessons, there are clear teacher controls and record keeping facilities, as well as advice on how best to use the CDs as whole class, group, or individual teaching aids.

Bursting with meaningful, well-structured content of the high quality that teachers have come to expect from Sherston Software and OUP, these CD-ROMs provide excellent value for money.

All the CD-ROMs mentioned are triple format and they are available on Sherston's popular 28 day free approval service that allows schools to trial software before deciding whether or not to buy.

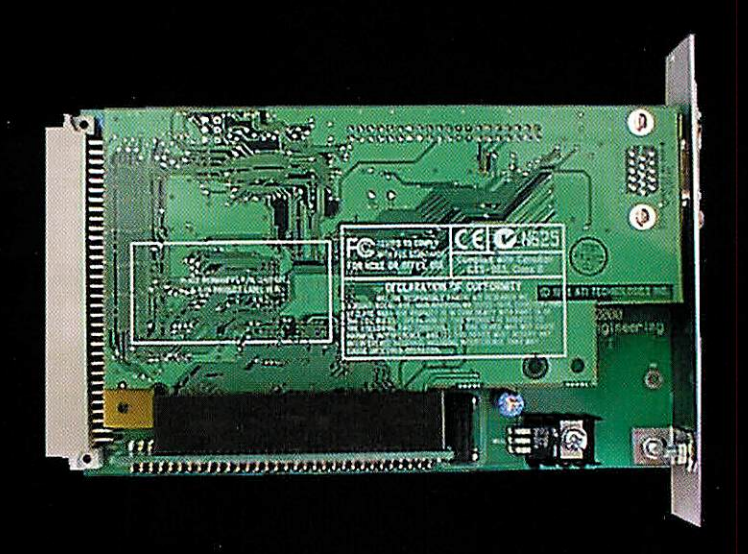
If you are interested in receiving further details of the Sherston range, their sales office can be contacted by phone (01666 843200), or fax (01666 843216) or email (sales@sherston.co .uk). Sherston also have a very popular Web site, which allows surfers to order online, even on 28 days free approval.

Check it out at: **www.sherston.com**



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